

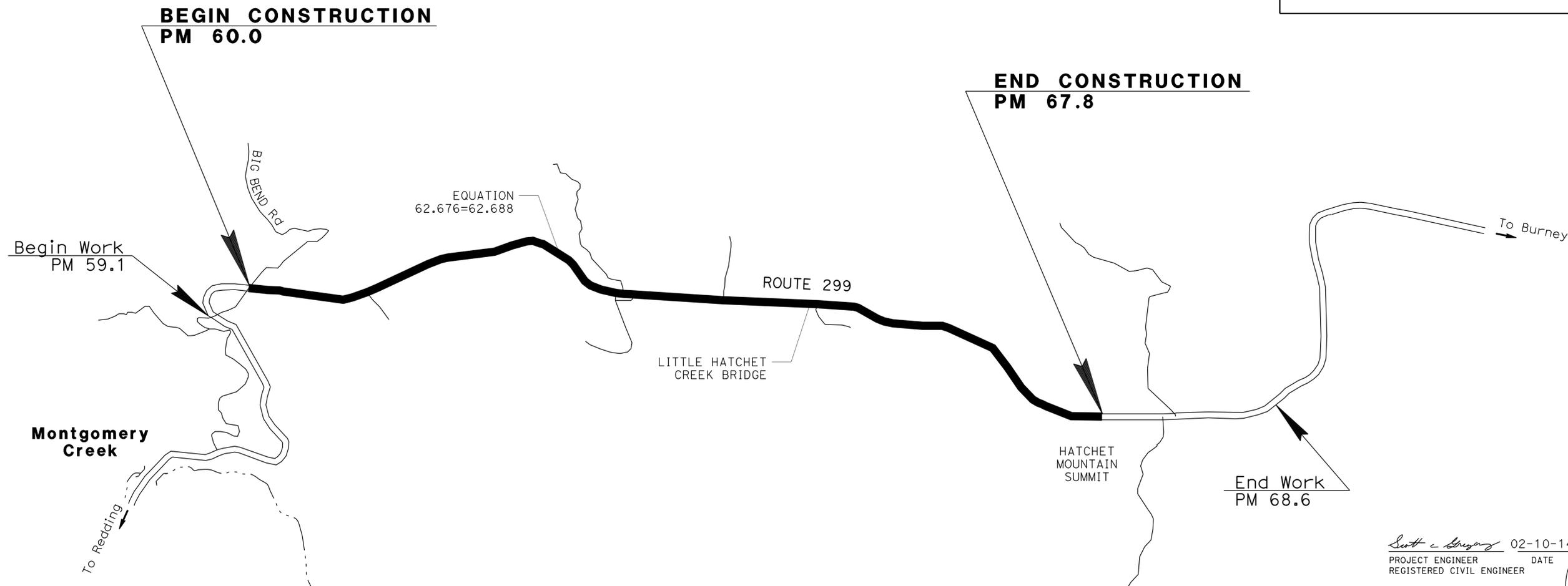
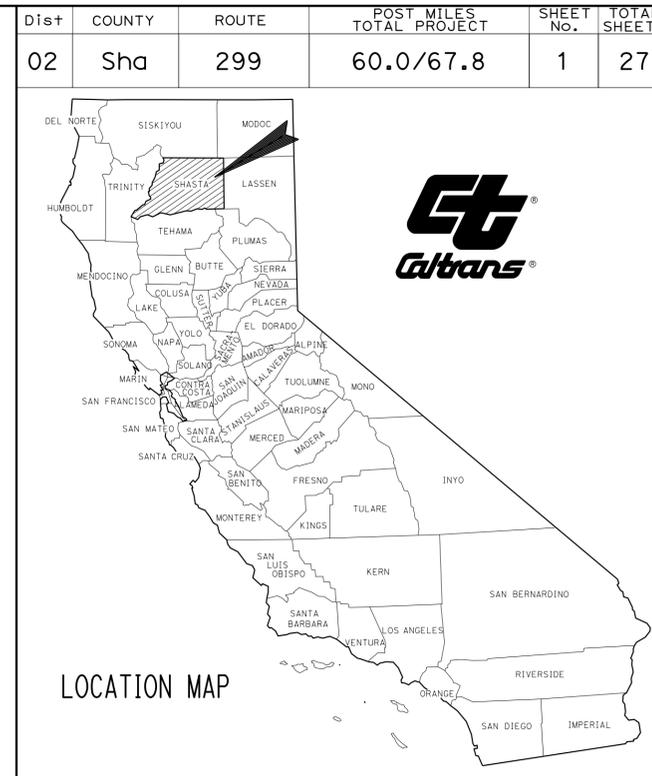
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-7	CONSTRUCTION DETAILS
8	CONSTRUCTION AREA SIGNS
9	PAVEMENT DELINEATION DETAILS
10	PAVEMENT DELINEATION QUANTITIES
11	SUMMARY OF QUANTITIES
12-13	ELECTRICAL PLANS
14-27	REVISED STANDARD PLANS

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

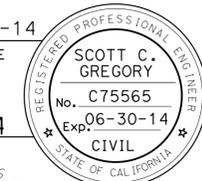
STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SHASTA COUNTY NEAR MONTGOMERY**  
**CREEK FROM 0.1 MILE WEST OF BIG BEND**  
**ROAD TO 2.8 MILES EAST OF LITTLE**  
**HATCHET CREEK BRIDGE**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2010



PROJECT MANAGER  
 LANCE BROWN  
 DESIGN ENGINEER  
 LANCE BROWN

*Scott C. Gregory* 02-10-14  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER



**FEBRUARY 10, 2014**  
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	<b>02-4G1904</b>
PROJECT ID	<b>0213000083</b>

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	2	27

*Scott C. Gregory* 02-10-14  
 REGISTERED CIVIL ENGINEER DATE  
 02-10-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 SCOTT C. GREGORY  
 No. C75565  
 Exp. 06-30-14  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

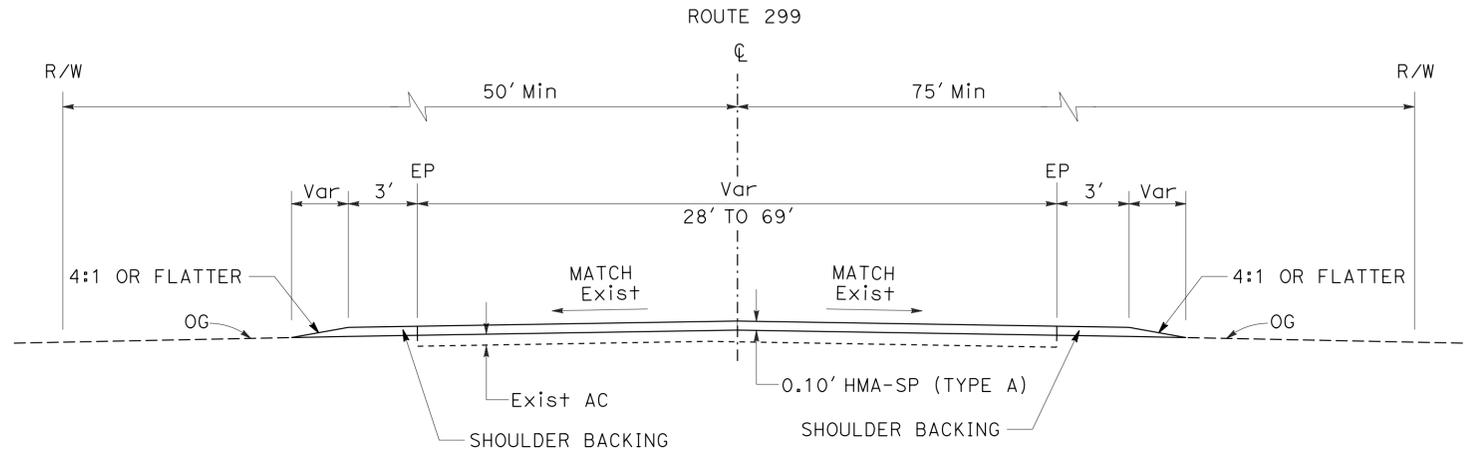
- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT R/W ENGINEERING AT THE DISTRICT OFFICE.

**ABBREVIATIONS:**

HMA-SP, (TYPE A) HOT MIX ASPHALT, SUPERPAVE (TYPE A)

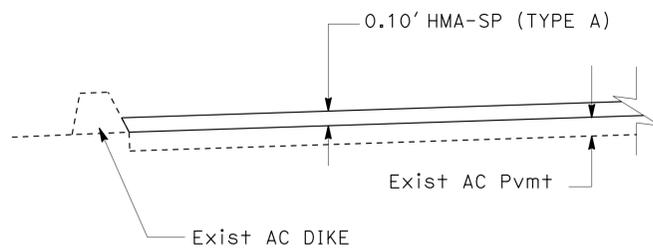
**PAVEMENT CLIMATE ZONE:**

HIGH MOUNTAIN



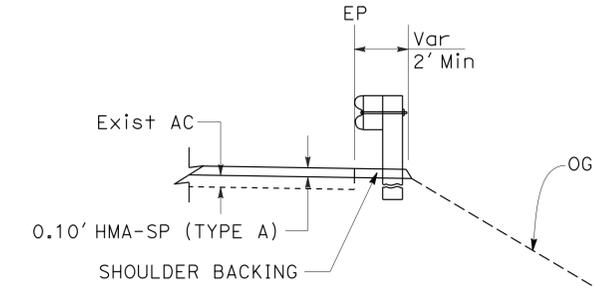
**TYPICAL CROSS SECTION**

PM 60.0 TO PM 67.8



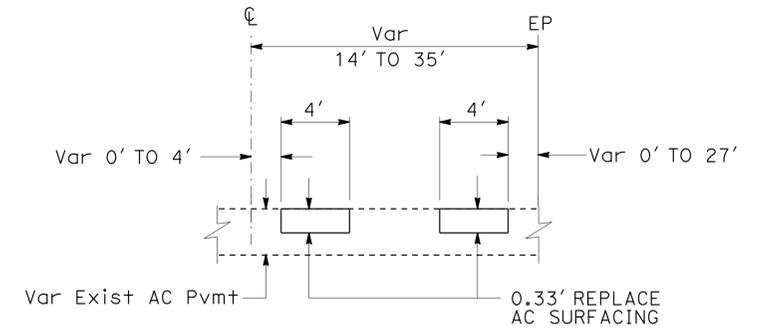
**DIKE LOCATION**

61.11-61.29 (L+)	60.05-60.12 (R+)
61.57-61.83 (L+)	61.08-61.31 (R+)
62.04-62.19 (L+)	61.55-61.72 (R+)
62.59-62.73 (L+)	61.88-62.17 (R+)
62.83-62.95 (L+)	62.56-62.75 (R+)
63.06-63.19 (L+)	63.29-63.39 (R+)
63.27-63.45 (L+)	65.51-65.64 (R+)
63.94-64.11 (L+)	66.11-66.19 (R+)
65.08-65.23 (L+)	
65.49-65.67 (L+)	
66.10-66.21 (L+)	
66.30-66.37 (L+)	
66.43-66.50 (L+)	
66.57-66.69 (L+)	
66.87-67.04 (L+)	



**GUARDRAIL LOCATION**

- PM 62.73 (L+)
- PM 62.76 (R+)
- PM 62.92 (R+)
- PM 62.96 (L+)
- PM 63.19 (R+)



**REPLACE AC SURFACING**

(TYPICAL BOTH DIRECTIONS)  
PM 60.0 TO 67.8

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 MAINTENANCE

**NOTE:**

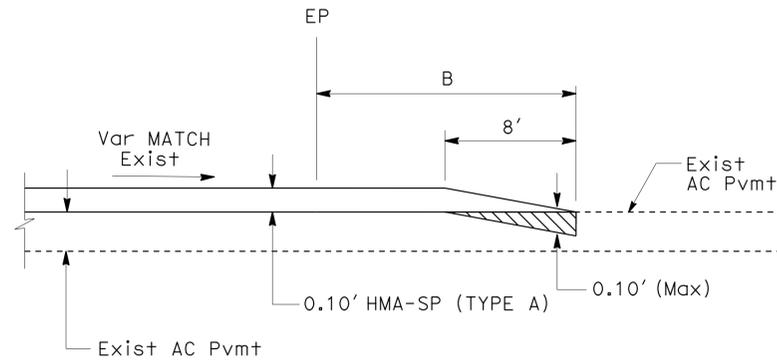
1. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.

**LEGEND:**

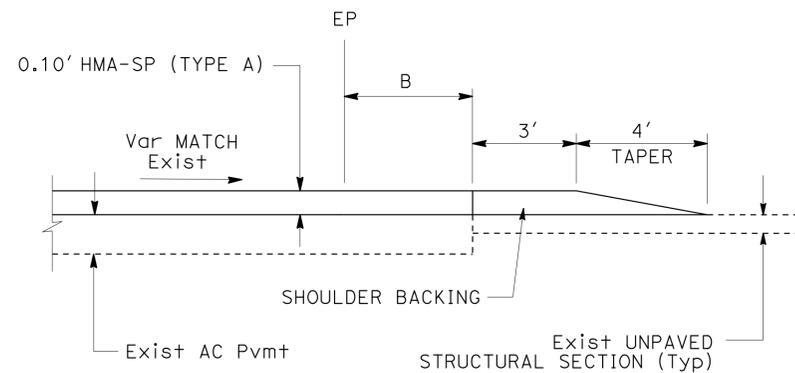
 COLD PLANE ASPHALT CONCRETE PAVEMENT (0.00' TO 0.10')

**ABBREVIATIONS:**

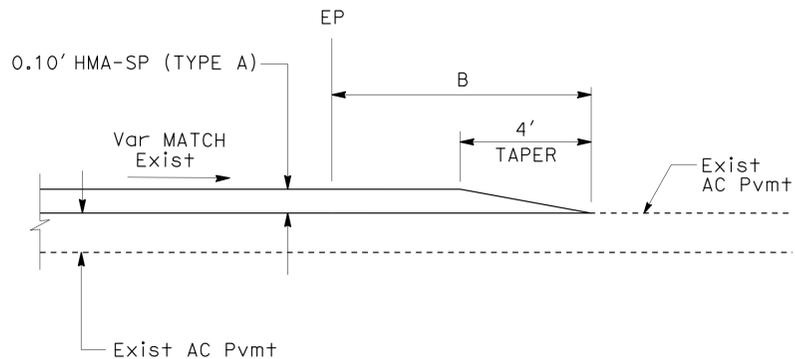
HMA-SP (TYPE A) HOT MIX ASPHALT, SUPERPAVE (TYPE A)



CASE A SECTION A-A



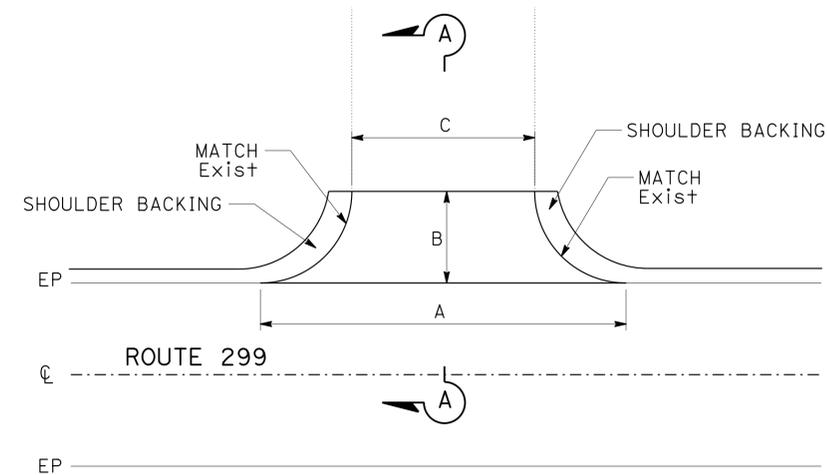
CASE B SECTION A-A



CASE C SECTION A-A

**ROAD CONNECTIONS**

ROAD CONNECTION	SIDE	POST MILE	DIMENSIONS (LF)			CASE
			A	B	C	
HILLCREST Dr	R+	60.05	140	25	75	A
BIG BEND Rd	L+	60.05	112	25	64	A
BOOTLEG Ln	R+	60.35	112	13	73	B
SAFETY ROADSIDE REST AREA ROAD CONNECTION	R+	60.58	193	58	30	A
STATE FOREST SERVICE CAMP ROAD CONNECTION	R+	61.06	280	33	35	B
ROAD CONNECTION	L+	61.31	240	25	45	A
ROAD CONNECTION	R+	61.54	157	24	40	B
ROAD CONNECTION	L+	62.15	162	25	41	B
ROAD TO MOOSE CAMP ROAD CONNECTION	R+	62.30	150	12	75	B
ROAD CONNECTION	L+	62.80	245	36	40	B
MOOSE CAMP Rd	R+	63.35	136	25	46	A
DRIVEWAY	L+	63.46	98	45	13	C
DRIVEWAY	L+	63.53	65	19	30	C
DRIVEWAY	R+	63.58	81	12	30	C
DRIVEWAY	R+	63.60	83	20	33	C
DRIVEWAY	R+	63.63	76	19	20	C
DRIVEWAY	L+	63.63	60	20	19	C
DRIVEWAY	L+	63.85	107	20	25	C
DRIVEWAY	L+	63.94	82	7	40	C
DRIVEWAY	R+	64.14	134	5	120	C
ROAD CONNECTION	L+	64.35	103	25	32	A
ROAD CONNECTION	R+	65.88	125	20	28	A



**PAVED ROAD CONNECTIONS**

**CONSTRUCTION DETAILS**

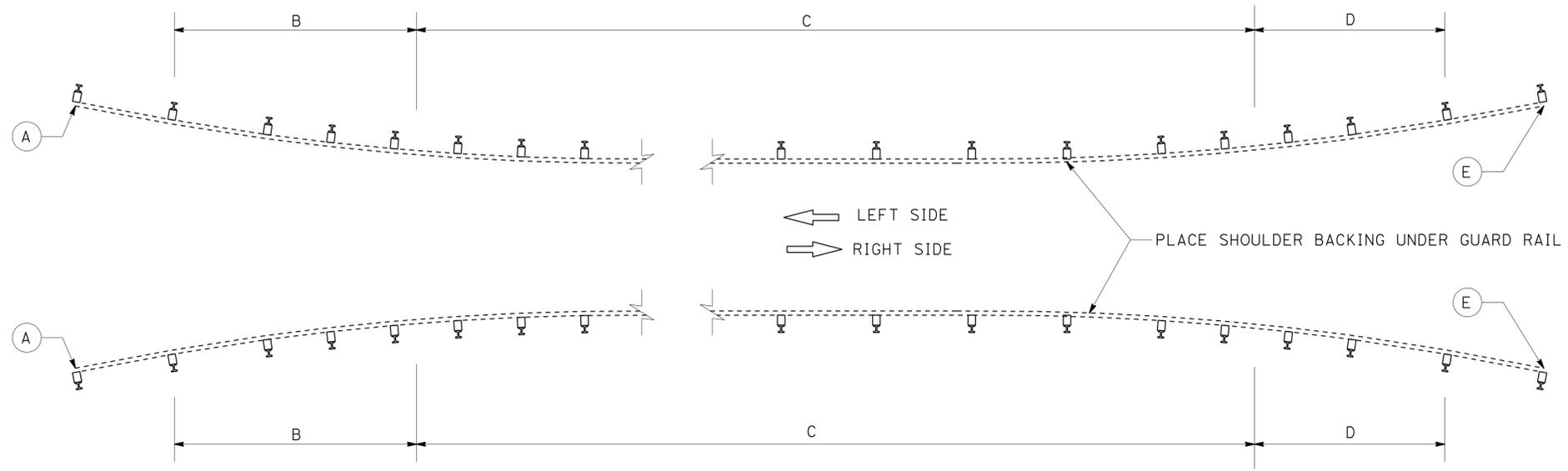
NO SCALE

**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN

**NOTE:**

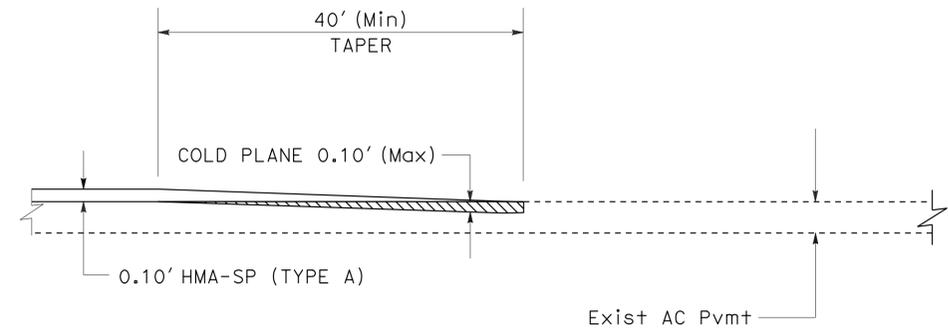
1. EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.



**GUARDRAIL\***

POST MILE	SIDE R+/L+	A		B	C	D	E	
		RECONSTRUCT END ANCHOR	RECONSTRUCT TERMINAL SYSTEM	RECONSTRUCT GUARDRAIL	RECONSTRUCT GUARDRAIL (7' POST)	RECONSTRUCT GUARDRAIL	RECONSTRUCT END ANCHOR	RECONSTRUCT TERMINAL SYSTEM
		TYPE	TYPE	LF	LF	LF	TYPE	TYPE
62.73	L+	BURIED		125	387.5	25	SFT	
62.76	R+	BURIED		0	537.5	0		SRT
62.92	R+		SRT	168.8	500	93.8		SRT
62.96	L+	SFT**		68.8	506.3	0	BURIED	
63.19	R+		SRT	75	300	75	BURIED	

\* SEE SHEET Q-1 FOR QUANTITIES  
 \*\* MINIMUM 20' FROM CENTERLINE AT 15:1 FLARE



**MAINLINE CONFORM TAPER**

PM 60.0  
 PM 67.8

**CONSTRUCTION DETAILS**

NO SCALE

**C-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 LANCE BROWN  
 SCOTT GREGORY  
 KARLIE SMITH  
 REVISOR BY DATE  
 REVISOR BY DATE  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 FUNCTIONAL SUPERVISOR  
 LANCE BROWN  
 PROJECT NUMBER & PHASE 02-1300-0083-1  
 EA: 02-4G190

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	5	27

REGISTERED CIVIL ENGINEER	DATE
SCOTT C. GREGORY	02-10-14
PLANS APPROVAL DATE	02-10-14

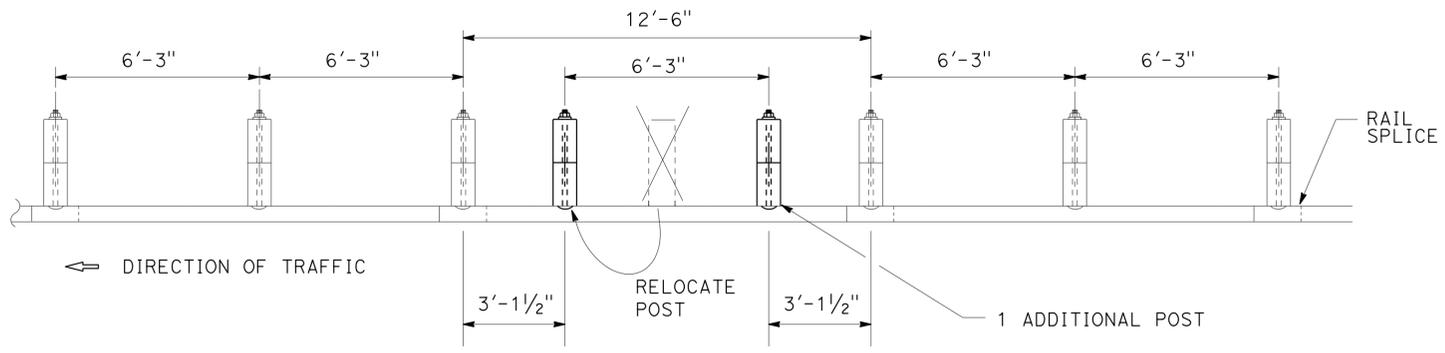
  

REGISTERED PROFESSIONAL ENGINEER
SCOTT C. GREGORY
No. C75565
Exp. 06-30-14
CIVIL

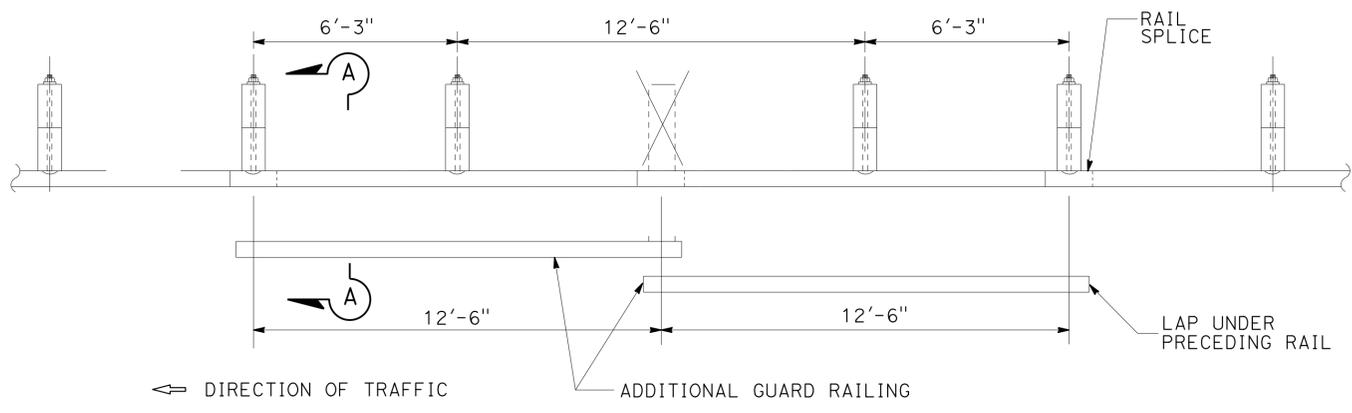
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

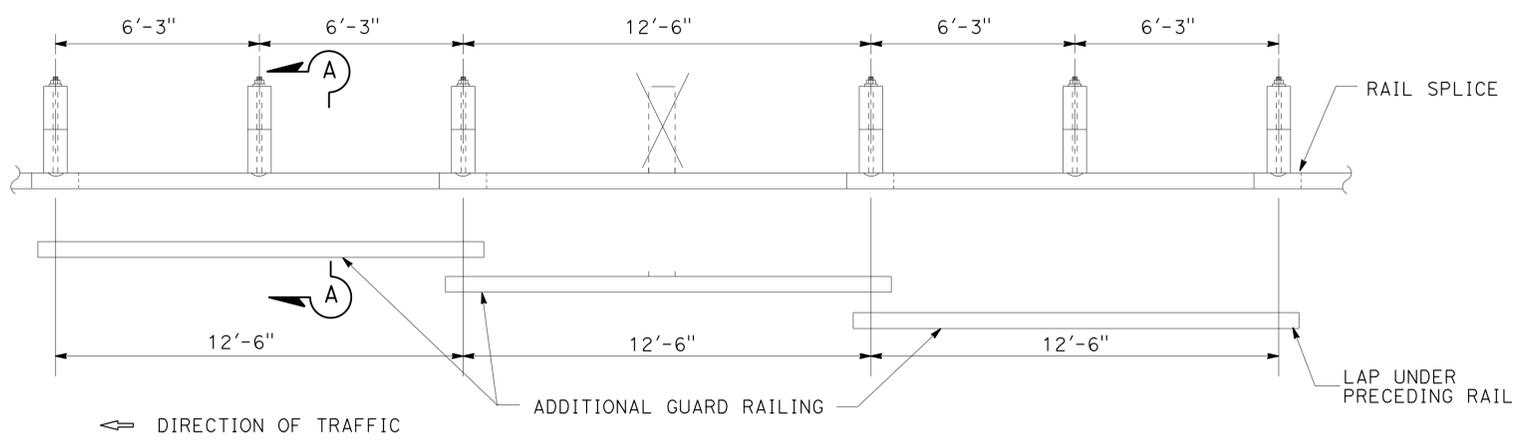
- LAP ALL RAILS AT EXISTING RAIL LAPS.
- WHEN A POST IS REMOVED AND THE RAIL ELEMENTS ARE LAPPED, THEN THE LAPPED ELEMENTS MUST BE SUPPORTED BY A Min OF 2 POSTS EACH SIDE OF THE MISSING POST OR ADD ADDITIONAL LENGTH OF LAPPED ELEMENTS.
- OBTAIN THE ENGINEERS AUTHORIZATION IF AN ADDITIONAL POST NEEDS TO BE REMOVED.
- EXISTING UTILITY FACILITIES ARE NOT SHOWN ON THESE PLANS.



**CASE 1**  
(ONE POST OMITTED, MOVE THE POST AND ADD ONE POST)  
(NO NESTED RAIL REQUIRED)



**CASE 2**  
(ONE POST OMITTED AT JUNCTION OF TWO ELEMENTS)



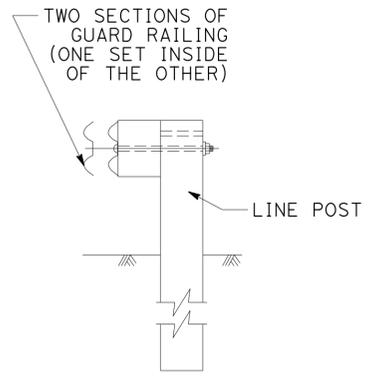
**CASE 3**  
(ONE POST OMITTED AT CENTER OF ELEMENT)  
(AN ADDITIONAL POST MAY BE REMOVED - SEE NOTE 3)

**LONG SPAN NESTED GUARD RAILING**

**CONSTRUCTION DETAILS**

NO SCALE

**C-3**



**TYPICAL RAILING OVERLAP INSTALLATION AT POST**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 USERNAME => s123119  
 DGN FILE => 24g190ga003.dgn  
 BORDER LAST REVISED 7/2/2010  
 UNIT 0156  
 PROJECT NUMBER & PHASE 02-1300-0083-1  
 EA: 02-4G190

LAST REVISION DATE PLOTTED => 11-FEB-2014  
 01-29-14 TIME PLOTTED => 11:23





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	8	27

*Scott C. Gregory* 02-10-14  
 REGISTERED CIVIL ENGINEER DATE

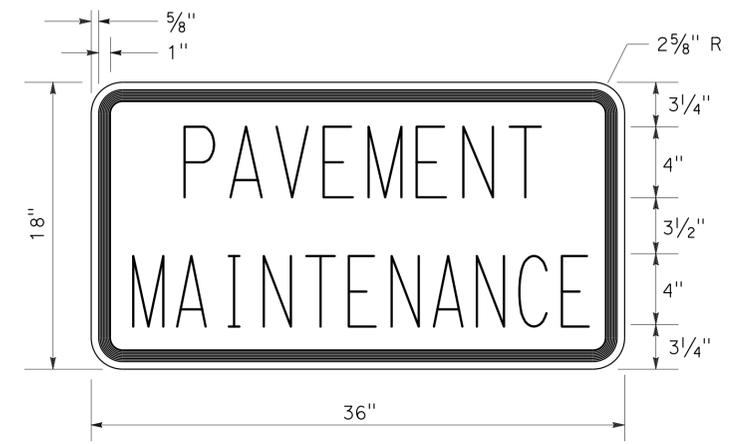
02-10-14  
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
 SCOTT C. GREGORY  
 No. C75565  
 Exp. 06-30-14  
 CIVIL  
 STATE OF CALIFORNIA

**NOTES:**

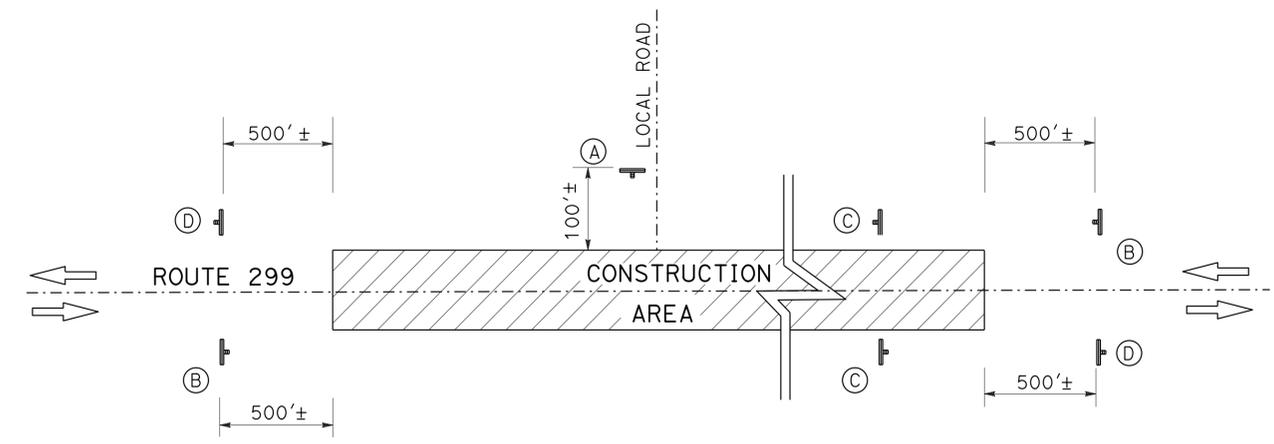
1. EXACT LOCATION OF ALL SIGNS TO BE DETERMINED BY THE ENGINEER.
2. CALIFORNIA CODES ARE DESIGNATED BY (CA), OTHERWISE FEDERAL CODES ARE SHOWN.
3. INTERMEDIATE G20-1 SIGNS SHOULD BE PLACED EVERY 3 TO 5 MILES AS NECESSARY.



**C23B(CA) SIGN PANEL DETAIL**

**LOCAL ROADS**

PM	DESCRIPTION
60.05	HILLCREST Dr/BIG BEND Rd - Rt & Lt
60.35	BOOTLEG Ln - Rt
60.58	SAFETY ROADSIDE REST AREA - Rt
61.06	ROAD CONNECTION - Rt
61.31	STATE FOREST SERVICE CAMP - Lt
61.54	ROAD CONNECTION - Rt
62.15	ROAD CONNECTION - Lt
62.30	ROAD TO MOOSE CAMP - Rt
62.80	ROAD CONNECTION - Lt
63.35	MOOSE CAMP Rd - Rt
64.35	ROAD CONNECTION - Lt
65.88	ROAD CONNECTION - Rt



**CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)**

TYPE	CODE	PANEL SIZE	SIGN MESSAGE	No. AND SIZE OF POST	No. OF SIGNS
(A)	W20-1	48" x 48"	ROAD WORK AHEAD	1- 4" x 6"	13
(B)	G20-1 C23B(CA)	36" x 18" 36" x 18"	ROAD WORK NEXT XX MILES "PAVEMENT MAINTENANCE"	1- 4" x 6"	2
(C)	G20-1	36" x 18"	ROAD WORK NEXT XX MILES	1- 4" x 4"	2
(D)	G20-2	36" x 18"	END ROAD WORK	1- 4" x 4"	2

**CONSTRUCTION AREA SIGNS**

NO SCALE

**CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans MAINTENANCE  
 FUNCTIONAL SUPERVISOR LANCE BROWN  
 CALCULATED/DESIGNED BY SCOTT GREGORY  
 CHECKED BY KARLIE SMITH  
 REVISED BY DATE REVISIONS



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	10	27

*Scott C. Gregory* 02-10-14  
 REGISTERED CIVIL ENGINEER DATE  
 02-10-14  
 PLANS APPROVAL DATE

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**NOTE:**

1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

**THERMOPLASTIC PAVEMENT MARKING**

POST MILE	L+	R+	(N) EA	SQFT	REMARKS
59.00		X	1	42.0	TYPE III (L) ARROW
60.02		X	1	42.0	TYPE III (R) ARROW
60.04		X	1	42.0	TYPE III (L) ARROW
60.05	X	X	2	44.0	STOP
60.05	X	X	2	72.0	ROAD CONNECTION LIMIT LINE
60.50	X		1	3.0	DETAL A
60.58		X	1	22.0	STOP
60.58		X	1	52.0	ROAD CONNECTION LIMIT LINE
60.60	X		1	42.0	TYPE III (L) ARROW
60.62	X		1	42.0	TYPE III (L) ARROW
61.06		X	1	42.0	ROAD CONNECTION LIMIT LINE
61.50	X		1	3.0	DETAIL A
62.50	X		1	3.0	DETAIL A
63.35		X	1	22.0	STOP
63.35		X	1	33.0	ROAD CONNECTION LIMIT LINE
63.50	X		1	3.0	DETAIL A
63.85	X	X	2	84.0	TYPE VI ARROW
63.89	X	X	2	84.0	TYPE VI ARROW
63.93	X	X	2	84.0	TYPE VI ARROW
64.35	X		1	40.0	ROAD CONNECTION LIMIT LINE
64.50	X		1	3.0	DETAIL A
65.50	X		1	3.0	DETAIL A
66.50	X		1	3.0	DETAIL A
67.50	X		1	3.0	DETAIL A
<b>TOTAL</b>				<b>813.0</b>	

**REMOVE PAVEMENT MARKER**

POST MILE LIMITS	EA
60.00-67.78	2719

**PAVEMENT MARKER (RETROREFLECTIVE-RECESSED)**

POST MILE LIMITS	TYPE D	TYPE G	TYPE H
	EA	EA	EA
60.00-67.78	2297	73	349
<b>TOTAL</b>	<b>2719</b>		

**THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)**

POST MILE LIMITS	DETAIL 6	DETAIL 12	DETAIL 19	DETAIL 22	DETAIL 27B	DETAIL 27C	DETAIL 29	DETAIL 38	DETAIL 38A
	LF	LF	LF	LF	LF	LF	LF	LF	LF
60.00-67.78	10,772	1584	8343	21,279	80,573	2007	1426	898	160
<b>TOTAL</b>	<b>127,042</b>								

**REMOVE THERMOPLASTIC PAVEMENT MARKING**

POST MILE	L+	R+	(N) EA	SQFT	REMARKS
59.99		X	1	42.0	TYPE III (L) ARROW
60.02		X	1	42.0	TYPE III (R) ARROW
60.04		X	1	42.0	TYPE III (L) ARROW
60.05	X	X	2	44.0	STOP
60.05	X	X	2	72.0	ROAD CONNECTION LIMIT LINE
60.58		X	1	22.0	STOP
60.58		X	1	52.0	ROAD CONNECTION LIMIT LINE
60.60	X		1	42.0	TYPE III (L) ARROW
60.62	X		1	42.0	TYPE III (L) ARROW
61.06		X	1	42.0	ROAD CONNECTION LIMIT LINE
63.35		X	1	22.0	STOP
63.35		X	1	33.0	ROAD CONNECTION LIMIT LINE
63.85	X	X	2	84.0	TYPE VI ARROW
63.89	X	X	2	84.0	TYPE VI ARROW
63.93	X	X	2	84.0	TYPE VI ARROW
64.35	X		1	40.0	ROAD CONNECTION LIMIT LINE
<b>TOTAL</b>				<b>789.0</b>	

**PAVEMENT DELINEATION QUANTITIES**

**PDQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 FUNCTIONAL SUPERVISOR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED

P:\proj\1\02\46190\plans\pse\24g190nc001.dgn  
 01-29-14 11:23  
 11-FEB-2014 11:23

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	11	27

*Scott C. Gregory* 02-10-14  
 REGISTERED CIVIL ENGINEER DATE  
 02-10-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 SCOTT C. GREGORY  
 No. C75565  
 Exp. 06-30-14  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
- EXACT LOCATION OF REPLACE AC SURFACING TO BE DETERMINED BY THE ENGINEER.

**ROADWAY QUANTITIES**

POST MILE LIMITS	(N) WIDTH	(N) LENGTH	HOT MIX ASPHALT, SUPERPAVE (TYPE A)	TACK COAT	SHOULDER BACKING
PM - PM	LF	LF	TON	TON	TON
60.00-60.07	69-64	422.4			
60.07-60.13	64-53	316.8			
60.13-60.15	53-51	105.6			
60.15-60.20	45-33	264.0			
60.20-60.45	33	1320.0			
60.45-60.50	33-40	264.0			
60.50-60.55	40-50	264.0			
60.55-60.61	50-59	316.8			
60.61-60.70	59-38	475.2			
60.70-61.00	38-32	1584.0			
61.00-61.11	32-40	580.8			
61.11-61.29	40-37	950.4			
61.29-61.31	37-35	105.6			
61.31-61.50	35-32	1003.2			
61.50-61.55	32-40	264.0			
61.55-61.83	40-45	1478.4			
61.83-61.87	45-50	211.2			
61.87-61.91	50-38	211.2			
61.91-62.00	38	475.2			
62.00-62.04	38-50	211.2			
62.04-62.18	50	739.2			
62.18-62.24	50	316.8			
62.24-62.56	31	1689.6			
62.56-62.59	37-40	158.4			
62.59-62.68	40	475.2			
62.69-62.71	40	105.6			
62.71-62.76	40-31	264.0			
62.76-62.86	31-35	528.0			
62.86-63.00	35-33	739.2			
63.00-63.35	33-37	1848.0			
63.35-63.39	37-45	211.2			
63.39-63.45	45-43	316.8			
63.45-63.48	55-52	158.4			
63.48-63.53	52-47	264.0			
63.53-63.55	47-32	105.6			
63.55-63.76	32-34	1108.8			
63.76-63.85	34-50	475.2			
63.85-63.98	50-57	686.4			
63.98-64.04	57-52	316.8			
64.04-64.15	52-30	580.8			
64.15-64.50	30	1848.0			
64.50-65.00	30-29	2640.0			
65.00-65.08	29	422.4			
65.08-65.23	32-36	792.0			
65.23-65.49	28-33	1372.8			
65.49-65.51	33-38	105.6			
65.51-65.64	38-30	686.4			
65.64-65.67	30-28	158.4			
65.67-66.00	28-29	1742.4			
<b>SUBTOTAL</b>			8750	38	1625

**ROADWAY QUANTITIES (Cont)**

POST MILE LIMITS	(N) WIDTH	(N) LENGTH	HOT MIX ASPHALT, SUPERPAVE (TYPE A)	TACK COAT	SHOULDER BACKING
PM - PM	LF	LF	TON	TON	TON
66.00-66.10	29-35	528.0			
66.10-66.11	35-39	52.8			
66.11-66.19	39	422.4			
66.19-66.21	34	105.6			
66.21-66.29	28	422.4			
66.29-66.30	48-35	52.8			
66.30-66.37	35-28	369.6			
66.37-66.43	28-32	316.8			
66.43-66.50	32-28	369.6			
66.50-66.57	28	369.6			
66.57-66.69	38	633.6			
66.69-66.87	28	950.4			
66.87-67.04	44-33	897.6			
67.04-67.78	29-30	3907.2			
ROAD CONNECTIONS AND DRIVEWAYS			358	3	51
PULLOUTS			262	2	5
<b>SUBTOTAL</b>			2840	15	578
<b>TOTAL</b>			11,590	53	2203

**REPLACE ASPHALT CONCRETE SURFACING**

POST MILE LIMITS	(N) Approx No. OF DIGOUTS	(N) LENGTH Avg	(N) WIDTH	(N) DEPTH	REPLACE ASPHALT CONCRETE SURFACING
PM - PM		LF	LF	LF	CY
60.00-61.00	18	100	4	0.33	88
61.00-62.00	18	100	4	0.33	88
62.00-63.00	18	100	4	0.33	88
63.00-64.00	18	100	4	0.33	88
64.00-65.00	18	100	4	0.33	88
65.00-66.00	18	100	4	0.33	88
66.00-67.00	18	100	4	0.33	88
67.00-67.78	18	100	4	0.33	88
<b>TOTAL</b>					704

**GUARDRAIL**

POST MILE	SIDE R+ / L+	RECONSTRUCT GUARDRAIL	RECONSTRUCT GUARDRAIL (7' POST)*	RECONSTRUCT END ANCHOR (TYPE SFT)*	RECONSTRUCT TERMINAL SYSTEM	FURNISH RAIL ELEMENT	(N) BURIED POST END ANCHOR	REMOVE MARKER	OBJECT MARKER (TYPE L-1)	TREATED WOOD WASTE
		LF	LF	EA	EA	LF	EA	EA	EA	LB
62.73	L+	150.0	387.5	1		112.5	1	1	1	7600
62.76	R+		537.5		1	112.5	1	1	1	8200
62.92	R+	262.6	500.0		2	162.5		1	1	12,000
62.96	L+	68.8	506.3	1		112.5	1	1	1	8200
63.19	R+	150.0	300.0		1	87.5	1	1	1	7000
<b>TOTAL</b>		631.4	2231.3	2	4	587.5	4	5	5	43,000

\* USE STEEL POSTS FOR RECONSTRUCT GUARDRAIL

**COLD PLANE ASPHALT CONCRETE PAVEMENT**

POST MILE	(N) LENGTH	(N) WIDTH	AREA	REMARKS
	LF	LF	SQYD	
60.00	40	69	307	MAINLINE CONFORM TAPER
60.05	8	75	67	HILLCREST Dr CONFORM TAPER- R+
60.05	8	64	57	BIG BEND Rd CONFORM TAPER - L+
60.58	8	30	27	SAFETY ROADSIDE REST AREA CONFORM TAPER- R+
61.31	8	45	40	STATE FOREST SERVICE CAMP CONFORM TAPER- L+
63.35	8	46	41	MOOSE CAMP Rd CONFORM TAPER- R+
64.35	8	32	28	ROAD CONNECTION CONFORM TAPER - L+
65.88	8	28	25	ROAD CONNECTION CONFORM TAPER - R+
67.78	40	30	133	MAINLINE CONFORM TAPER
<b>TOTAL</b>			725	

**PREPAVING GRINDING DAY**

POST MILE LIMITS	EA
60.00-67.78	3
<b>TOTAL</b>	3

**SUMMARY OF QUANTITIES Q-1**

P:\proj\1\02\46190\plans\pse\24g190pa001.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 MAINTENANCE  
 SCOTT GREGORY  
 KARLIE SMITH  
 LANCE BROWN  
 REVISIONS: 01-29-14 11:24 AM



P:\proj\102\46190\plans\pse\24g190\002.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR  
 ROB STINGER  
 CALCULATED/DESIGNED BY  
 ARTURO P. ROBLES  
 CHECKED BY  
 SCOTT GREGORY  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	13	27
			02-10-14		
REGISTERED ELECTRICAL ENGINEER			DATE		
02-10-14			PLANS APPROVAL DATE		

ART 02-10-14

REGISTERED PROFESSIONAL ENGINEER

A.P. ROBLES

No. E15293

Exp. 3-31-15

ELECTRICAL

STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

### TRAFFIC COUNT STATION

TYPE A LOOP	
SHOULDER TERMINATION	
RESET OBJECT MARKER	
ADJUST PULL BOX	
2	1
1	1
1	1

ITEMS IN THIS TABLE ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

### EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS TO BE MAINTAINED

ELEMENT	LOCATION Co-Rte-PM	DESCRIPTON
HAR SIGN	Sha-299-60.00	WEST OF BIG BEND Rd

## ELECTRICAL QUANTITIES

### E-2

LAST REVISION | DATE PLOTTED => 11-FEB-2014  
 01-29-14 | TIME PLOTTED => 11:24

	<b>M</b>
Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKMENT
Mt	MOUNTAIN, MOUNT
MtI	MATERIAL
MVP	MAINTENANCE VEHICLE PULLOUT
	<b>N</b>
N	NORTH
NB	NORTHBOUND
No.	NUMBER (MUST HAVE PERIOD)
Nos.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NSP	NEW STANDARD PLAN
NTS	NOT TO SCALE
	<b>O</b>
Obir	OBLITERATE
OC	OVERCROSSING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OGFC	OPEN GRADED FRICTION COURSE
OH	OVERHEAD
OHWM	ORDINARY HIGH WATER MARK
O-O	OUT TO OUT
Opp	OPPOSITE
OSD	OVERSIDE DRAIN
	<b>P</b>
p	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PEC	PERMIT TO ENTER AND CONSTRUCT
Ped	PEDESTRIAN
Ped OC	PEDESTRIAN OVERCROSSING
Ped UC	PEDESTRIAN UNDERCROSSING
Perm MtI	PERMEABLE MATERIAL

	<b>P continued</b>
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
Pkwy	PARKWAY
PL, PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POC	POINT OF HORIZONTAL CURVE
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE
PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
Pvmt	PAVEMENT
	<b>Q</b>
Qty	QUANTITY
	<b>R</b>
R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
Rd	ROAD
Reinf	REINFORCED, REINFORCEMENT, REINFORCING
Rel	RELOCATE
Repl	REPLACEMENT
Ret	RETAINING
Rev	REVISED, REVISION
Rdwy	ROADWAY
RHMA	RUBBERIZED HOT MIX ASPHALT
Riv	RIVER
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN
Rt	RIGHT
Rte	ROUTE
RW	REDWOOD, RETAINING WALL
R/W	RIGHT OF WAY
Rwy	RAILWAY

	<b>S</b>
S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
SL	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK, SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES
	<b>T</b>
T	SEMI-TANGENT
Tan	TANGENT
TBB	THRIE BEAM BARRIER
Tbr	TIMBER
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TCE	TEMPORARY CONSTRUCTION EASEMENT
TeI	TELEPHONE
Temp	TEMPORARY
TG	TOP OF GRADE
Tot	TOTAL
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
Trans	TRANSITION

	<b>T continued</b>
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL
Typ	TYPICAL
	<b>U</b>
UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
	<b>V</b>
V	VALVE, DESIGN SPEED
Var	VARIABLE, VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
Vert	VERTICAL
Via	VIADUCT
Vol	VOLUME
	<b>W</b>
W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
Wt	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE
	<b>X</b>
X Sec	CROSS SECTION
Xing	CROSSING
	<b>Y</b>
Yr	YEAR
Yrs	YEARS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	14	27

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Grace M. Tsushima  
 No. C49814  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 02-10-14

**UNIT OF MEASUREMENT SYMBOLS:**

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

**TABLE A**

SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SQFT	SQUARE FOOT
SQYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

**TABLE B**

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
Ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

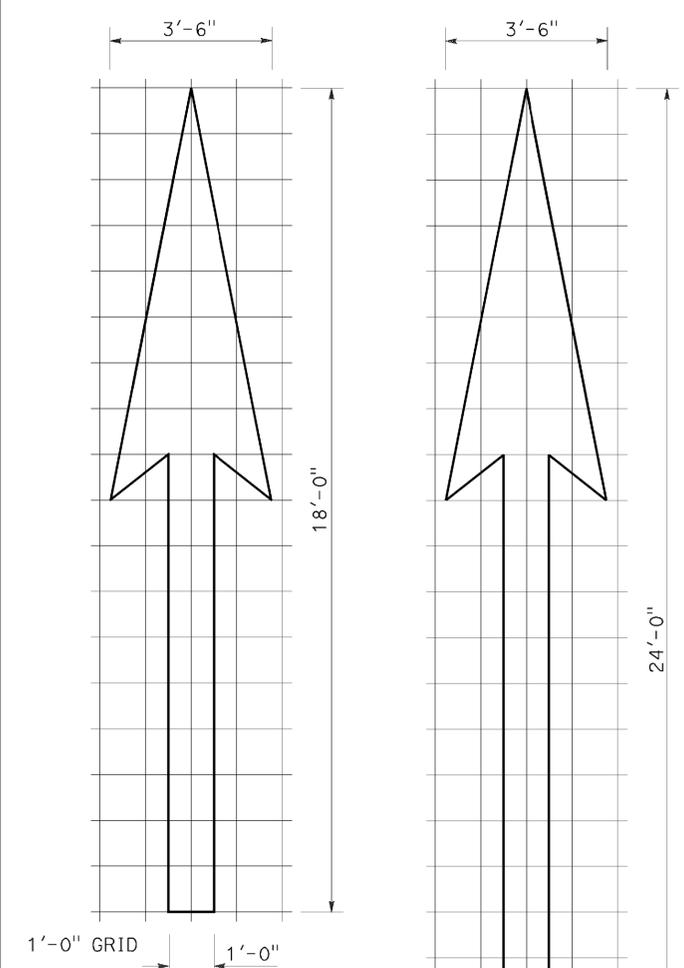
**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

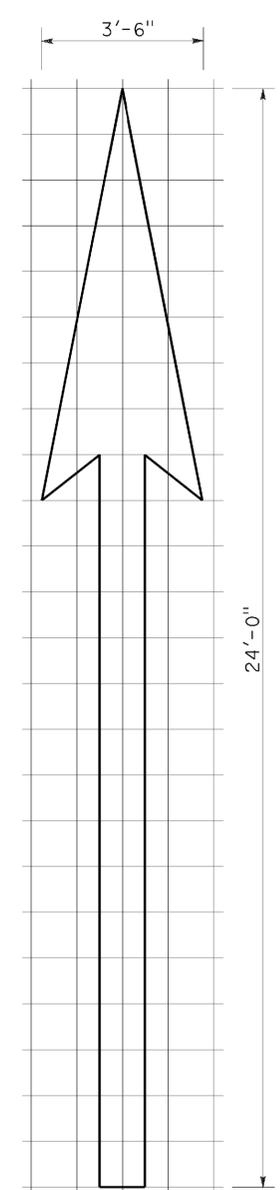
RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B  
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A10B**

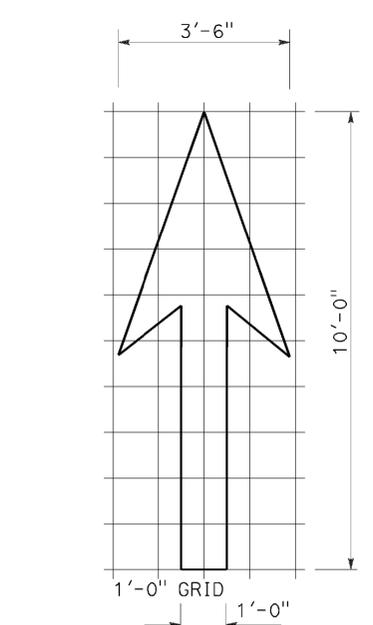
TO ACCOMPANY PLANS DATED 02-10-14



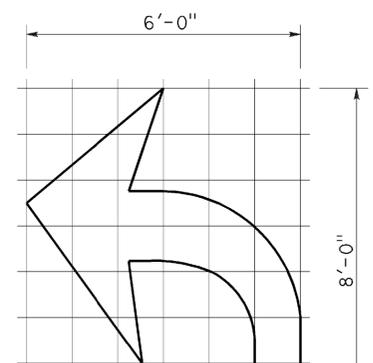
A=25 ft<sup>2</sup>  
**TYPE I 18'-0" ARROW**



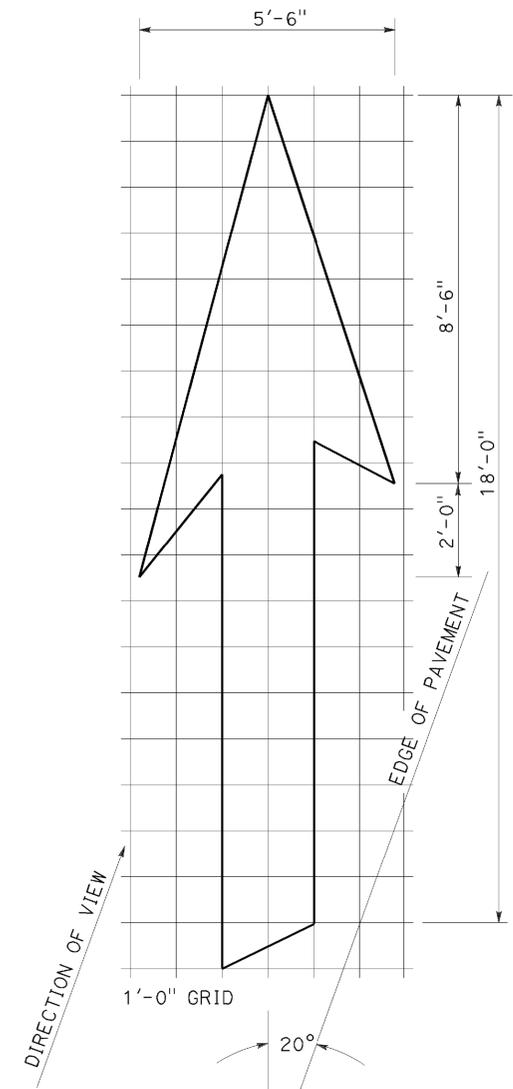
A=31 ft<sup>2</sup>  
**TYPE I 24'-0" ARROW**



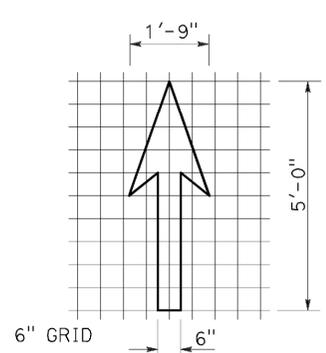
A=14 ft<sup>2</sup>  
**TYPE I 10'-0" ARROW**



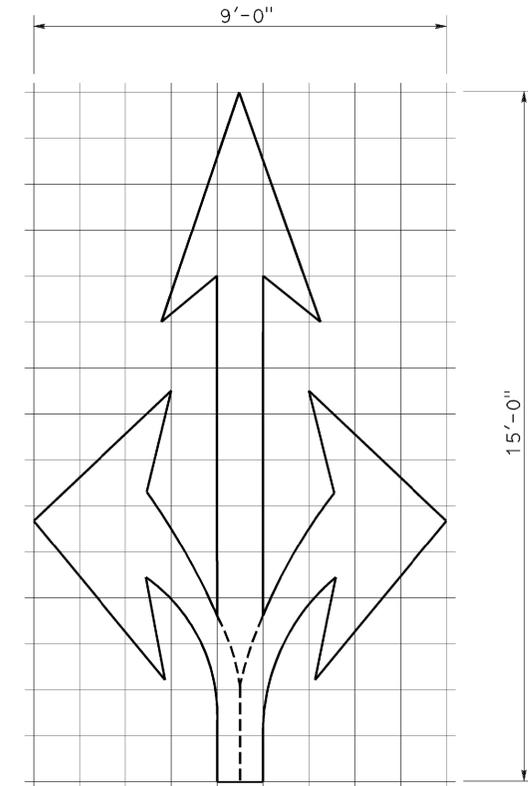
A=15 ft<sup>2</sup>  
**TYPE IV (L) ARROW**  
(For Type IV (R) arrow, use mirror image)



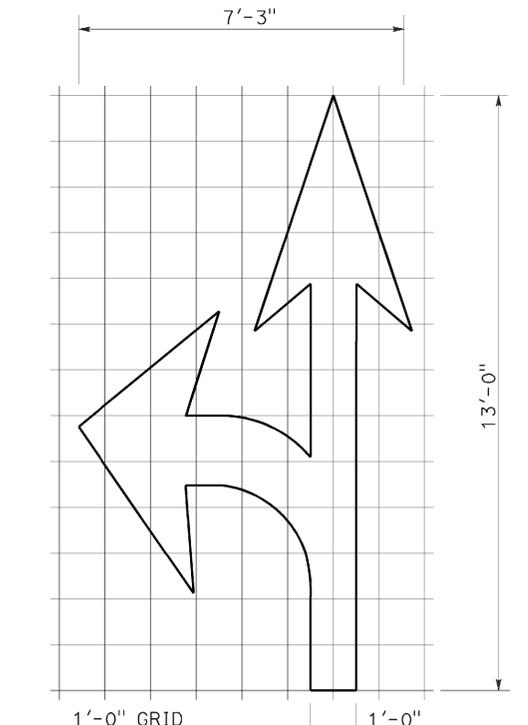
A=42 ft<sup>2</sup>  
**TYPE VI ARROW**  
Right lane drop arrow  
(For left lane, use mirror image)



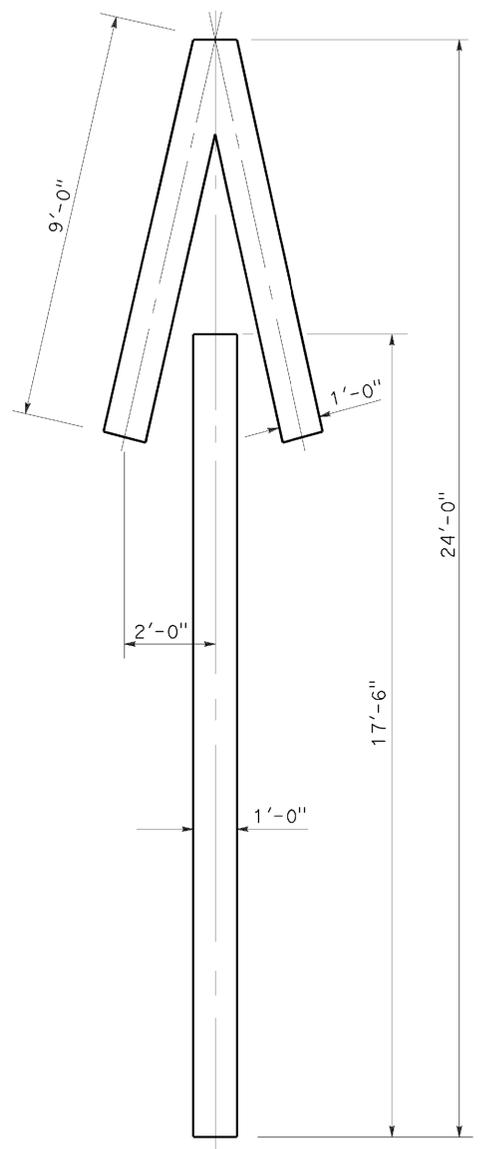
A=3.5 ft<sup>2</sup>  
**BIKE LANE ARROW**



A=36 ft<sup>2</sup>  
**TYPE VIII ARROW**



A=27 ft<sup>2</sup>  
**TYPE VII (L) ARROW**  
(For Type VII (R) arrow, use mirror image)



A=33 ft<sup>2</sup>  
**TYPE V ARROW**

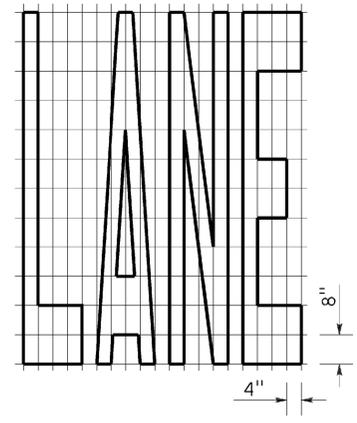
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
ARROWS**  
NO SCALE

RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

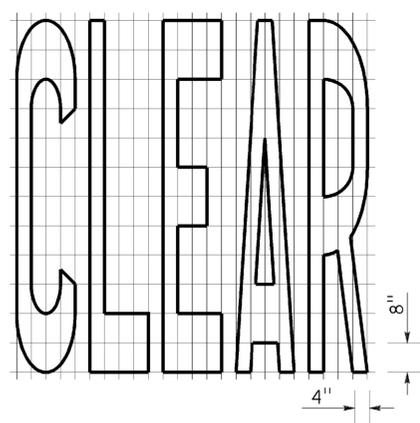
**REVISED STANDARD PLAN RSP A24A**

**NOTE:**  
Minor variations in dimensions may be accepted by the Engineer.

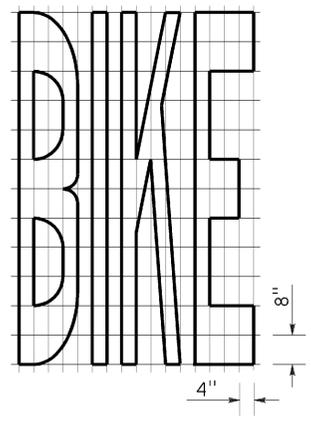
TO ACCOMPANY PLANS DATED 02-10-14



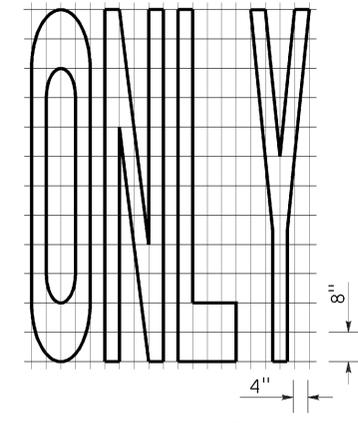
A=24 ft²



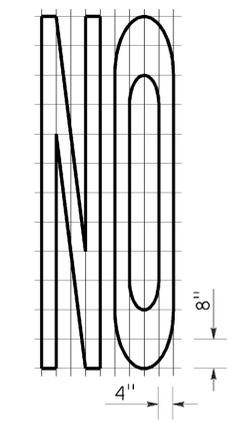
A=27 ft²



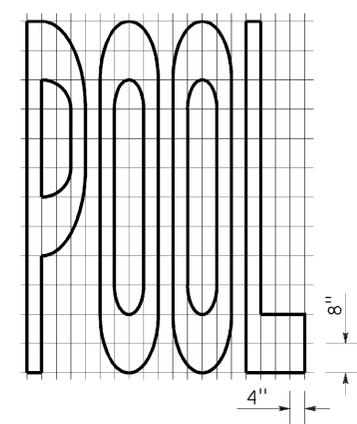
A=21 ft²



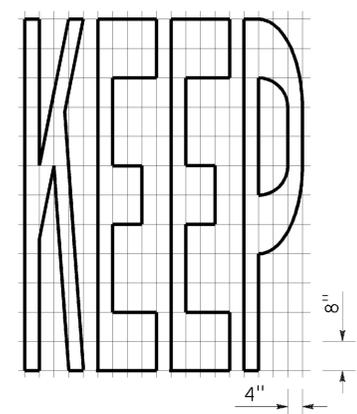
A=22 ft²



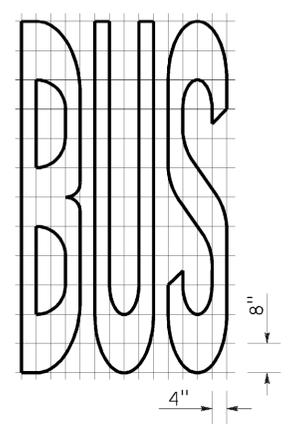
A=14 ft²



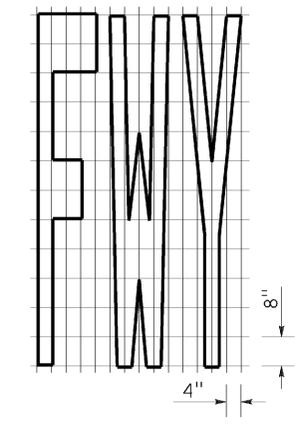
A=23 ft²



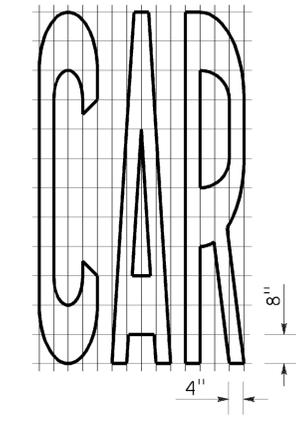
A=24 ft²



A=20 ft²

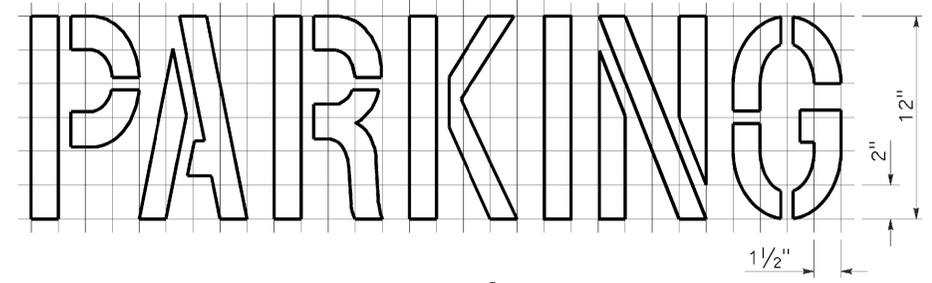
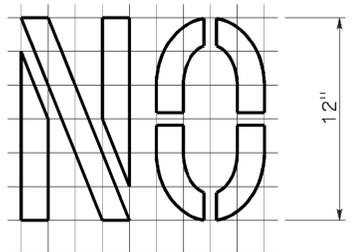


A=16 ft²

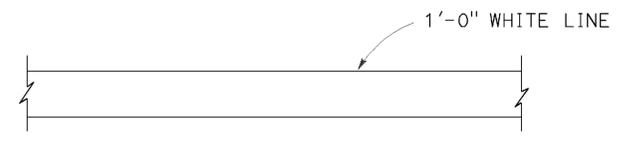


A=17 ft²

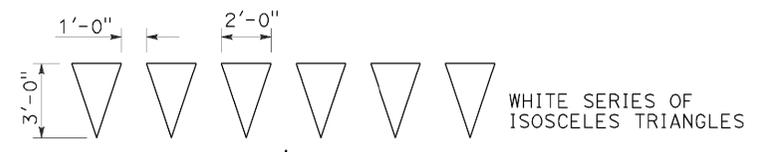
WORD MARKINGS			
ITEM	ft²	ITEM	ft²
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft²  
See Notes 6 and 7



LIMIT LINE (STOP LINE)



DIRECTION OF TRAVEL  
YIELD LINE

NOTES:

- If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
- The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
- Minor variations in dimensions may be accepted by the Engineer.
- Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
- The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
- The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS**  
**WORDS, LIMIT AND YIELD LINES**  
 NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24E**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	17	27

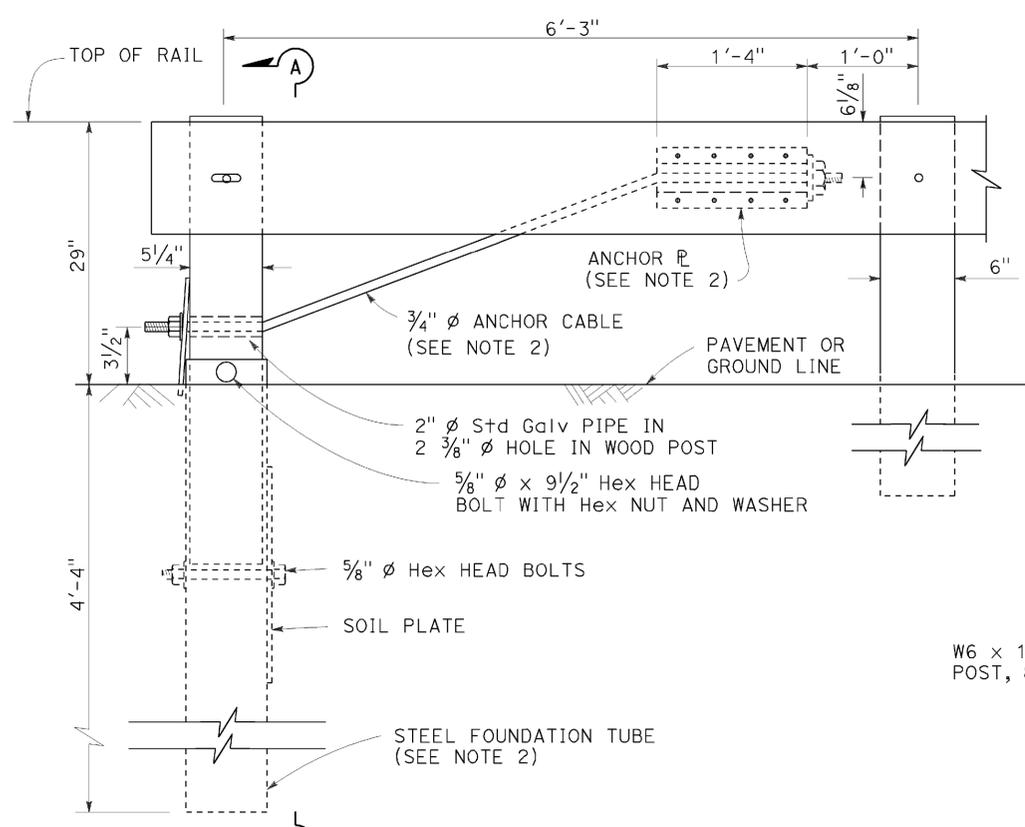
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

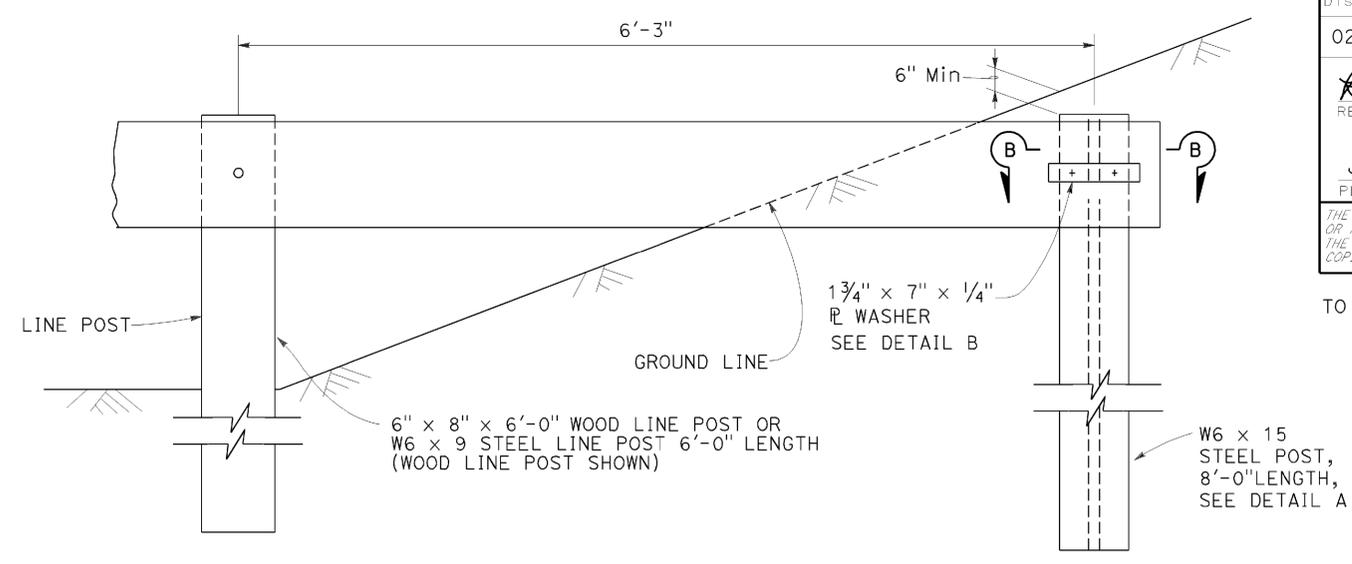
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TO ACCOMPANY PLANS DATED 02-10-14

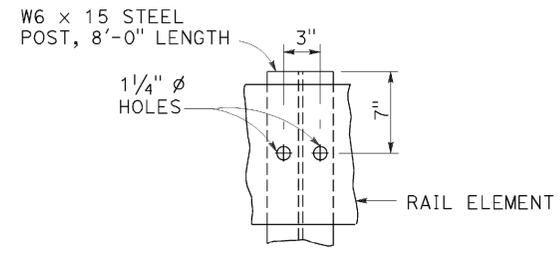
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



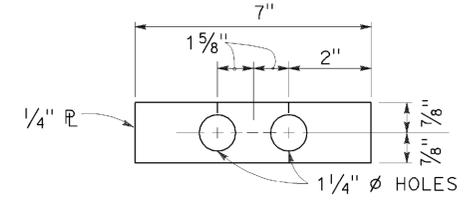
**ELEVATION  
END ANCHOR  
ASSEMBLY (TYPE SFT)**



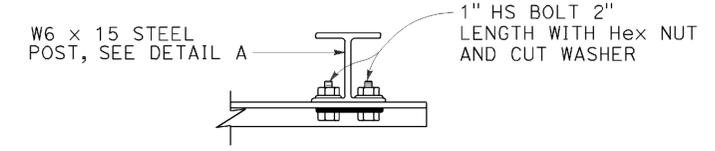
**BURIED POST END ANCHOR**



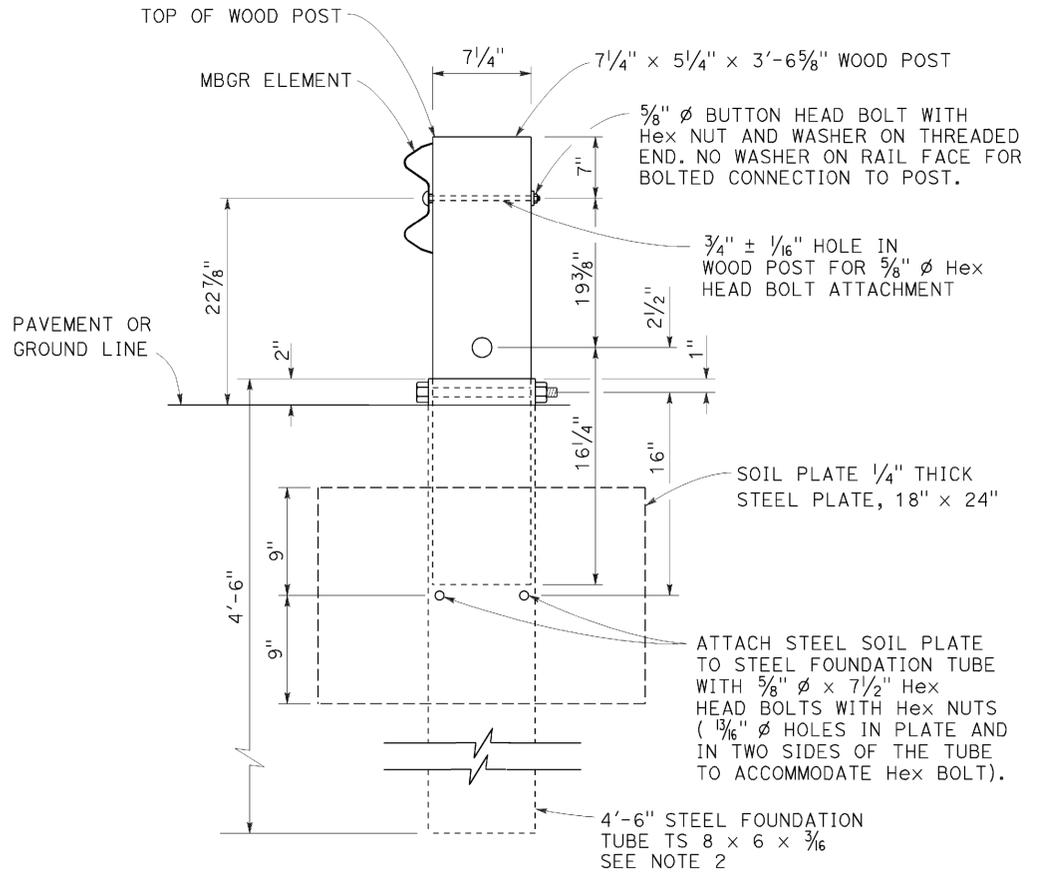
**DETAIL A**



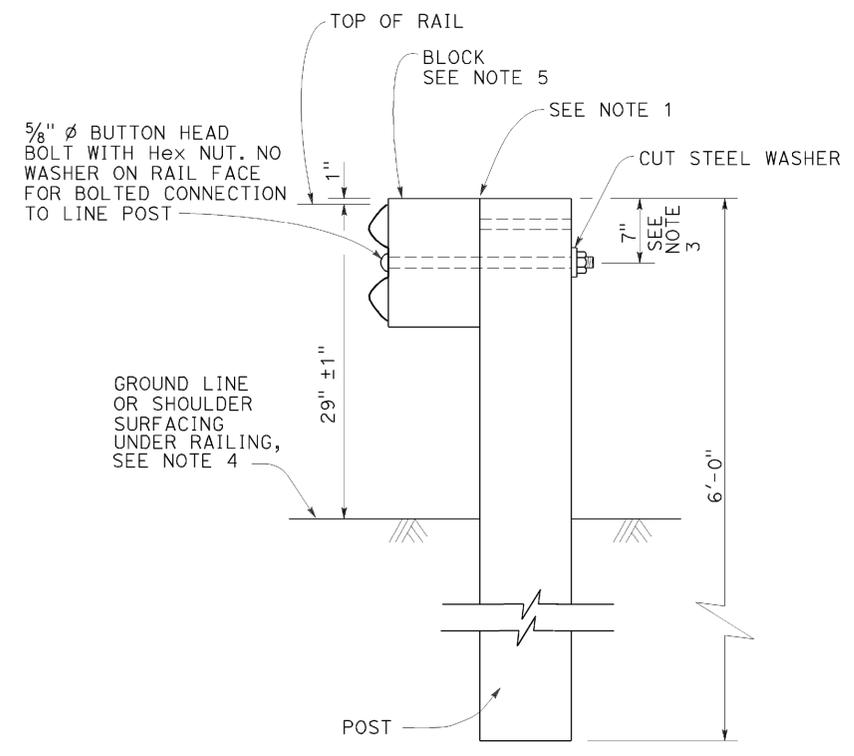
**DETAIL B**



**SECTION B-B**



**SECTION A-A**



**TYPICAL LINE  
POST INSTALLATION**

**NOTES:**

1. For wood post and wood block, toenail with 2-16d Galv nails in top of block. For steel post and notched wood or plastic block, notched face of block faces steel post.
2. A 6'-0" Length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" Hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
3. To connect railing to 27" terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
4. Install posts in soil.
5. See Revised Standard Plans RSP A77N1 and RSP A77N2 for details.
6. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
RECONSTRUCT INSTALLATION**

NO SCALE

RSP A77L3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L3**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	18	27

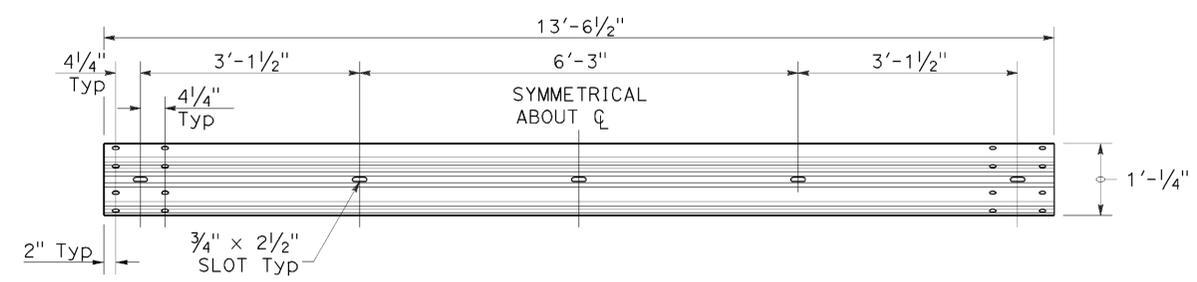
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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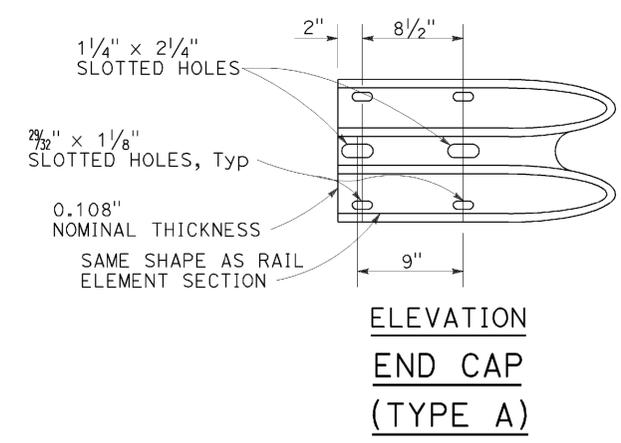
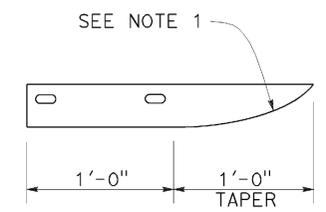
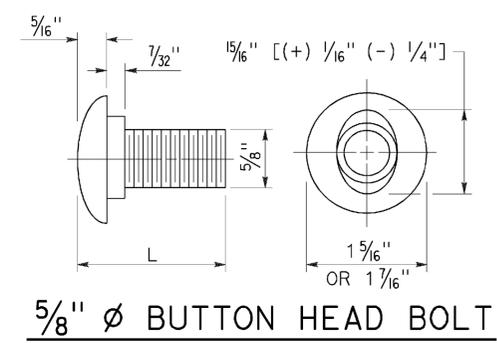
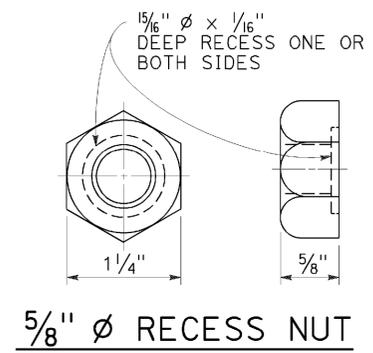
TO ACCOMPANY PLANS DATED 02-10-14



**TYPICAL RAIL ELEMENT**

**NOTE:**

1. Slotted holes for splice bolts to overlap ends of rail element.



**BUTTON HEAD BOLT**

L	THREAD LENGTH
1 3/8"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2 3/4"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

\*\* For nested rail applications.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE**

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77M1**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	19	27

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

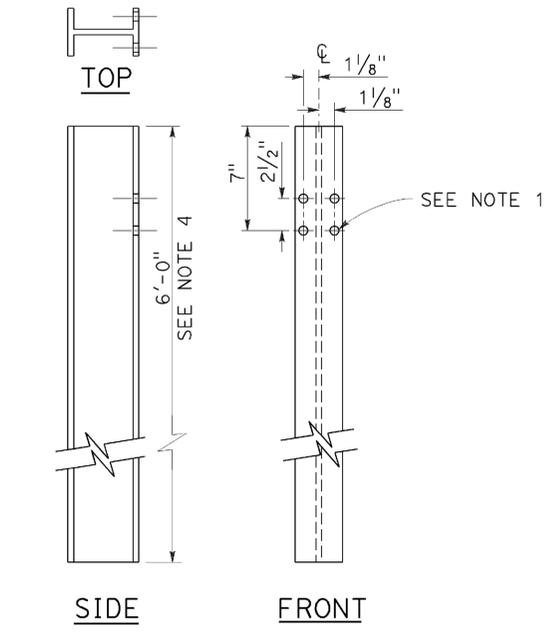
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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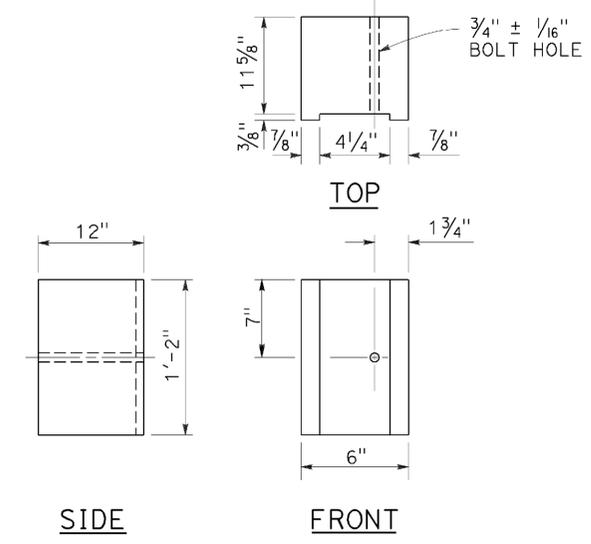
TO ACCOMPANY PLANS DATED 02-10-14

**NOTES:**

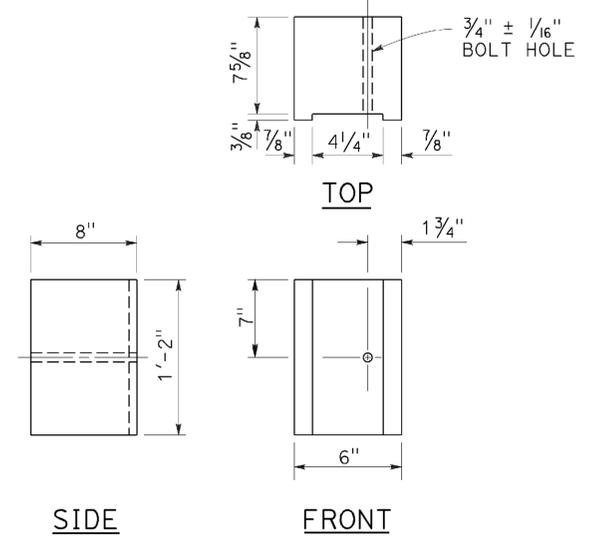
1. All holes in steel post shall be 1 3/8" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.



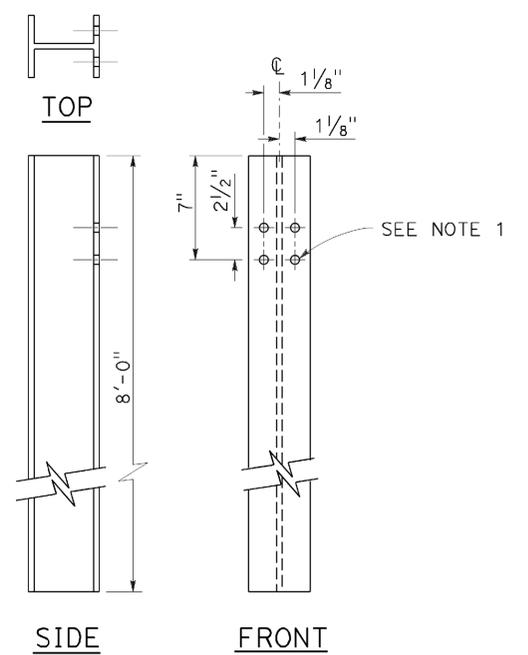
**W6 x 9 OR W6 x 8.5  
STEEL POST**  
See Note 4



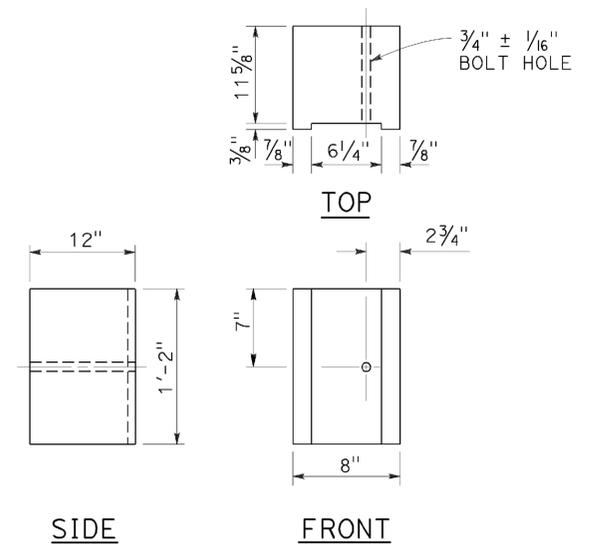
**6" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



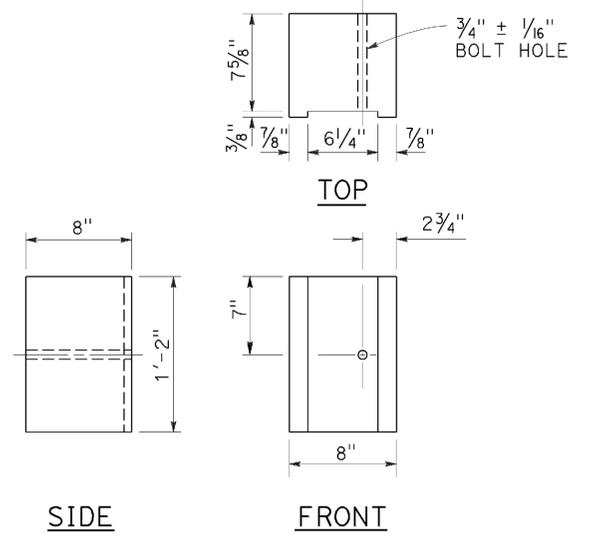
**6" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5



**W6 x 15  
STEEL POST**  
See Note 6



**8" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



**8" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STEEL POST AND  
NOTCHED WOOD BLOCK DETAILS**

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N2**

TO ACCOMPANY PLANS DATED 02-10-14

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

\* - For other offsets, use the following merging taper length formula for L:  
 For speed of 40 mph or less,  $L = WS^2/60$   
 For speed of 45 mph or more,  $L = WS$

Where: L = Taper length in feet  
 W = Width of offset in feet  
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

\*\* - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

\* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph  
 \*\* - Longitudinal buffer space or flagger station spacing  
 \*\*\* - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

\* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

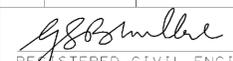
NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

### REVISED STANDARD PLAN RSP T9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	21	27

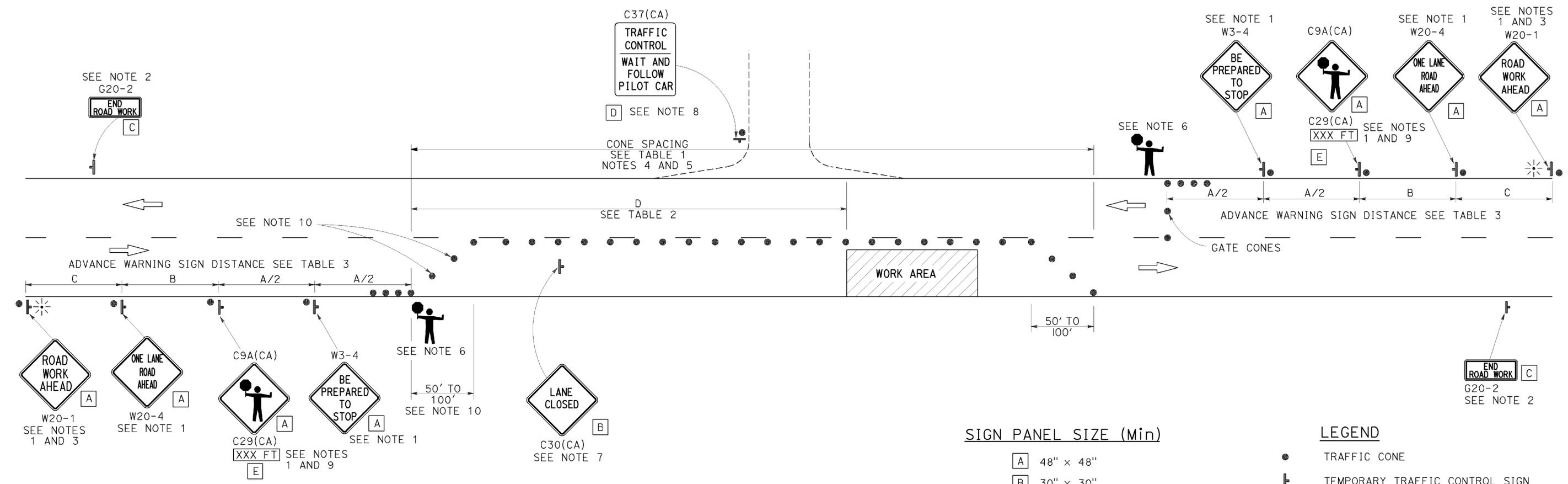
  

 REGISTERED CIVIL ENGINEER		
April 19, 2013 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		

**NOTES:**

See Revised Standard Plan RSP T9 for tables.  
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.  
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.  
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**



**NOTES:**

- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a W20-4 sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 20" x 7"

**LEGEND**

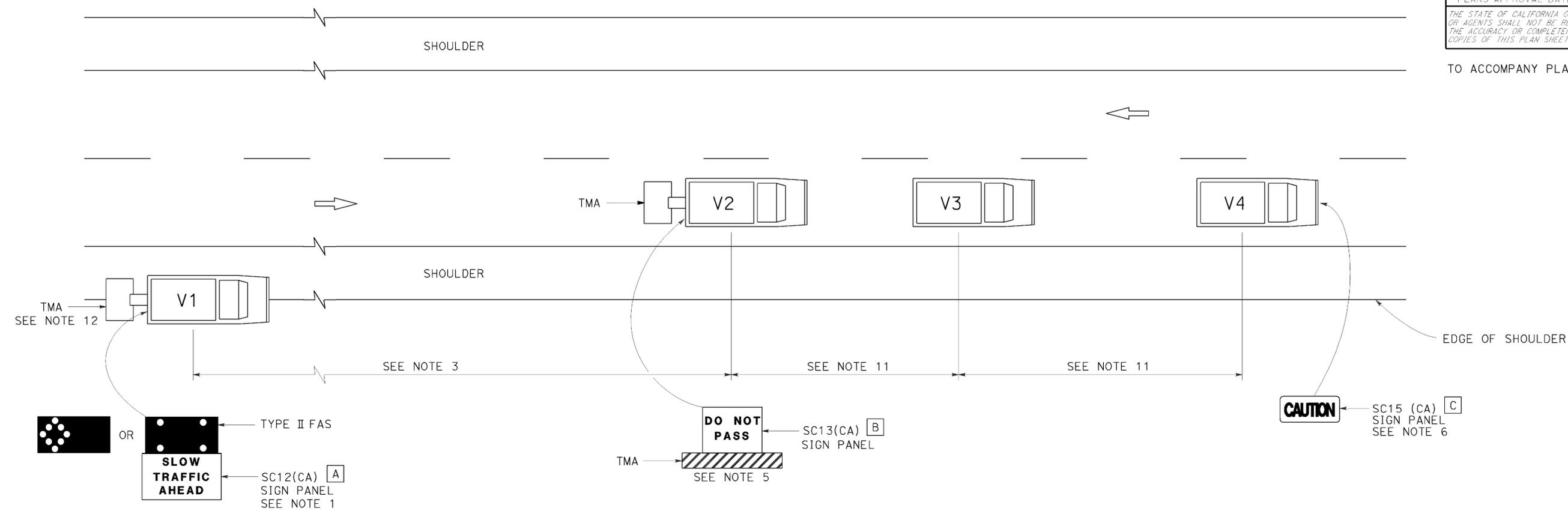
- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ PORTABLE FLASHING BEACON
- 👤 FLAGGER

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURE ON  
 TWO LANE CONVENTIONAL  
 HIGHWAYS**  
 NO SCALE

RSP T13 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T13  
 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T13**

TO ACCOMPANY PLANS DATED 02-10-14



**NOTES:**

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.
7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

**LEGEND**

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
- FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
- FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

**SIGN PANEL SIZE (Min)**

- [A] 72" x 42"
- [B] 54" x 42"
- [C] 54" x 24"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR MOVING LANE CLOSURE  
 ON TWO LANE HIGHWAYS**  
 NO SCALE

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17  
 DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T17**

**LEGEND:**

- AB** ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
- BC** INSTALL PULL BOX IN EXISTING CONDUIT RUN
- BP** PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
- CB** INSTALL CONDUIT INTO EXISTING PULL BOX
- CC** CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
- CF** CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
- DH** DETECTOR HANDHOLE
- FA** FOUNDATION TO BE ABANDONED
- IS** INSTALL SIGN ON SIGNAL MAST ARM
- NS** NO SLIP BASE ON STANDARD
- PEC** PHOTOELECTRIC CONTROL
- PEU** PHOTOELECTRIC UNIT
- RC** EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
- RE** REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
- RL** RELOCATE EQUIPMENT
- RR** REMOVE AND REUSE EQUIPMENT
- RS** REMOVE AND SALVAGE EQUIPMENT
- SC** SPLICE NEW TO EXISTING CONDUCTORS
- SD** SERVICE DISCONNECT
- TSP** TELEPHONE SERVICE POINT

**ABBREVIATIONS**

- |       |   |       |                                      |
|-------|---|-------|--------------------------------------|
| APS   | ACCESSIBLE PEDESTRIAN SIGNAL            | M/M   | MULTIPLE TO MULTIPLE TRANSFORMER     |
| BBS   | BATTERY BACKUP SYSTEM                   | Mtg   | MOUNTING                             |
| BC    | BOLT CIRCLE                             | MV    | MERCURY VAPOR LIGHTING FIXTURE       |
| BPB   | BICYCLE PUSH BUTTON                     | MVDS  | MICROWAVE VEHICLE DETECTION SYSTEM   |
| C     | CONDUIT                                 | N     | NEUTRAL (GROUNDED CONDUCTOR)         |
| CB    | CIRCUIT BREAKER                         | NB    | NEUTRAL BUS                          |
| CCTV  | CLOSED CIRCUIT TELEVISION               | NC    | NORMALLY CLOSE                       |
| Ckt   | CIRCUIT                                 | NO    | NORMALLY OPEN                        |
| CMS   | CHANGEABLE MESSAGE SIGN                 | P     | CIRCUIT BREAKER'S POLE               |
| Ctid  | CALTRANS IDENTIFICATION                 | PB    | PULL BOX                             |
| Comm  | COMMUNICATION                           | PBA   | PUSH BUTTON ASSEMBLY                 |
| DLC   | LOOP DETECTOR LEAD-IN CABLE             | PEC   | PHOTOELECTRIC CONTROL                |
| EMS   | EXTINGUISHABLE MESSAGE SIGN             | Ped   | PEDESTRIAN                           |
| EVUC  | EMERGENCY VEHICLE UNIT CABLE            | PEU   | PHOTOELECTRIC UNIT                   |
| EVUD  | EMERGENCY VEHICLE UNIT DETECTOR         | PT    | CONDUIT WITH PULL TAPE               |
| FB    | FLASHING BEACON                         | RE    | RELOCATED EQUIPMENT                  |
| FBCA  | FLASHING BEACON CONTROL ASSEMBLY        | RM    | RAMP METERING                        |
| FBS   | FLASHING BEACON WITH SLIP BASE          | RWIS  | ROADSIDE WEATHER INFORMATION SYSTEM  |
| FO    | FIBER OPTIC                             | SB    | SLIP BASE                            |
| G     | EQUIPMENT GROUNDING CONDUCTOR           | SIC   | SIGNAL INTERCONNECT CABLE            |
| GB    | GROUND BUS                              | Sig   | SIGNAL                               |
| GFCI  | GROUND FAULT CIRCUIT INTERRUPTER        | SMA   | SIGNAL MAST ARM                      |
| HAR   | HIGHWAY ADVISORY RADIO                  | SNS   | STREET NAME SIGN                     |
| Hex   | HEXAGONAL                               | SP    | SERVICE POINT                        |
| HPS   | HIGH PRESSURE SODIUM                    | TDC   | TELEPHONE DEMARCATION CABINET        |
| IISNS | INTERNALLY ILLUMINATED STREET NAME SIGN | TMS   | TRAFFIC MONITORING STATION           |
| ISL   | INDUCTION SIGN LIGHTING                 | TOS   | TRAFFIC OPERATIONS SYSTEM            |
| LED   | LIGHT EMITTING DIODE                    | Veh   | VEHICLE                              |
| LMA   | LUMINAIRE MAST ARM                      | VIVDS | VIDEO IMAGE VEHICLE DETECTION SYSTEM |
| LPS   | LOW PRESSURE SODIUM                     | WIM   | WEIGH-IN-MOTION                      |
| Ltg   | LIGHTING                                | Xfmr  | TRANSFORMER                          |
| Lum   | LUMINAIRE                               |       |                                      |
| M     | METERED                                 |       |                                      |
| MAT   | MAST ARM MOUNTING TOP ATTACHMENT        |       |                                      |
| MAS   | MAST ARM MOUNTING SIDE ATTACHMENT       |       |                                      |

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	23	27

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 02-10-14

**SOFFIT AND WALL MOUNTED LUMINAIRES**

- PENDANT, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL SURFACE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO BE MODIFIED AS SPECIFIED

**NOTE:**  
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
$\Omega$	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
$\mu$	MICRO
P	PICO
HZ	HERTZ

**MISCELLANEOUS ELECTROLIERS**

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

**NOTES:**

- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
- LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

**STANDARD ELECTROLIER**

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-1A**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	24	27

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 02-10-14

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

### CONDUIT

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

### SIGNAL EQUIPMENT

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

### SERVICE EQUIPMENT

NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

### POLE-MOUNTED SERVICE DESIGNATION

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--

### FLASHING BEACON

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

### SIGNAL EQUIPMENT Cont

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

### NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.

### ILLUMINATED OVERHEAD SIGN

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP ES-1B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	25	27

Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

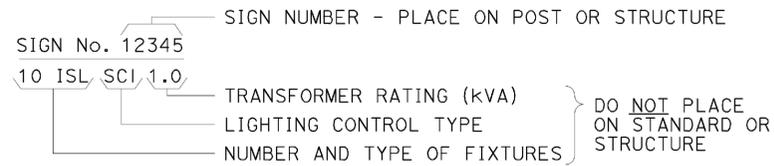
July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

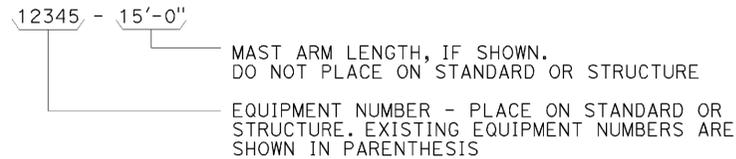
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

### EQUIPMENT IDENTIFICATION

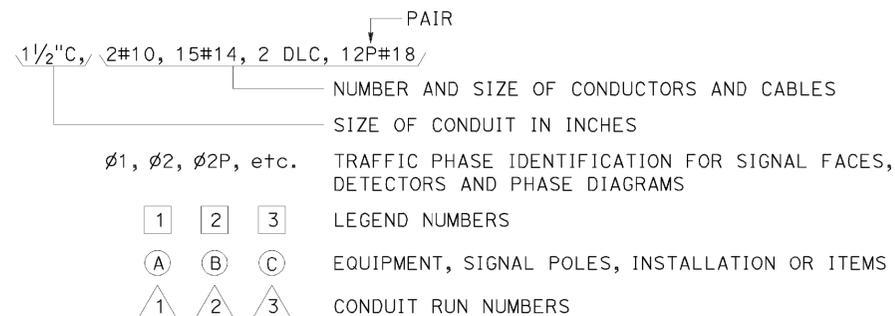
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



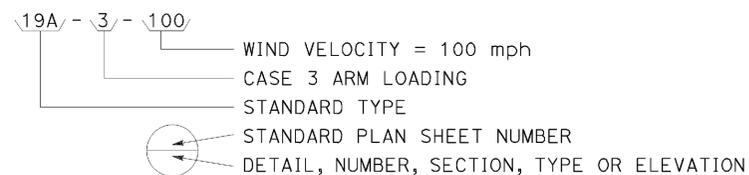
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



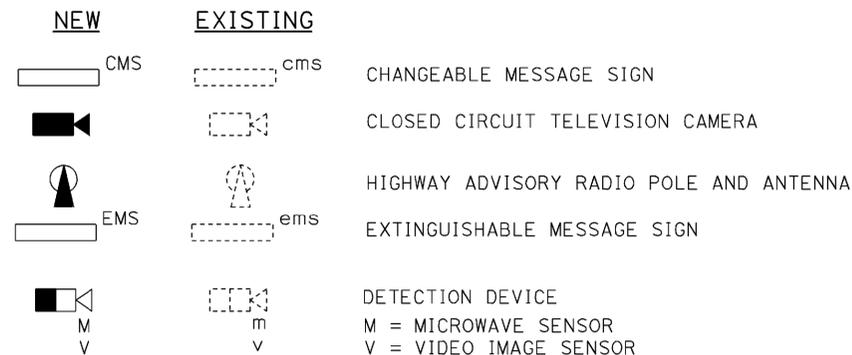
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



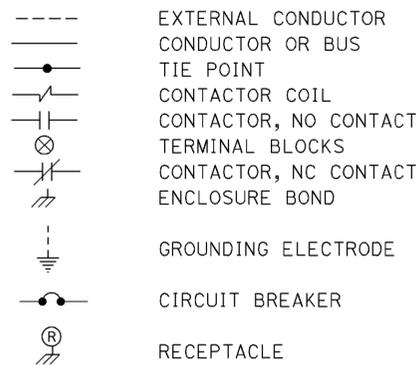
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



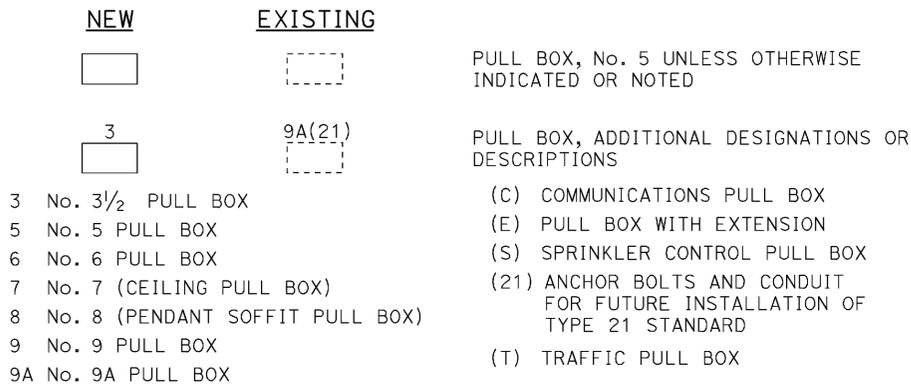
### MISCELLANEOUS EQUIPMENT



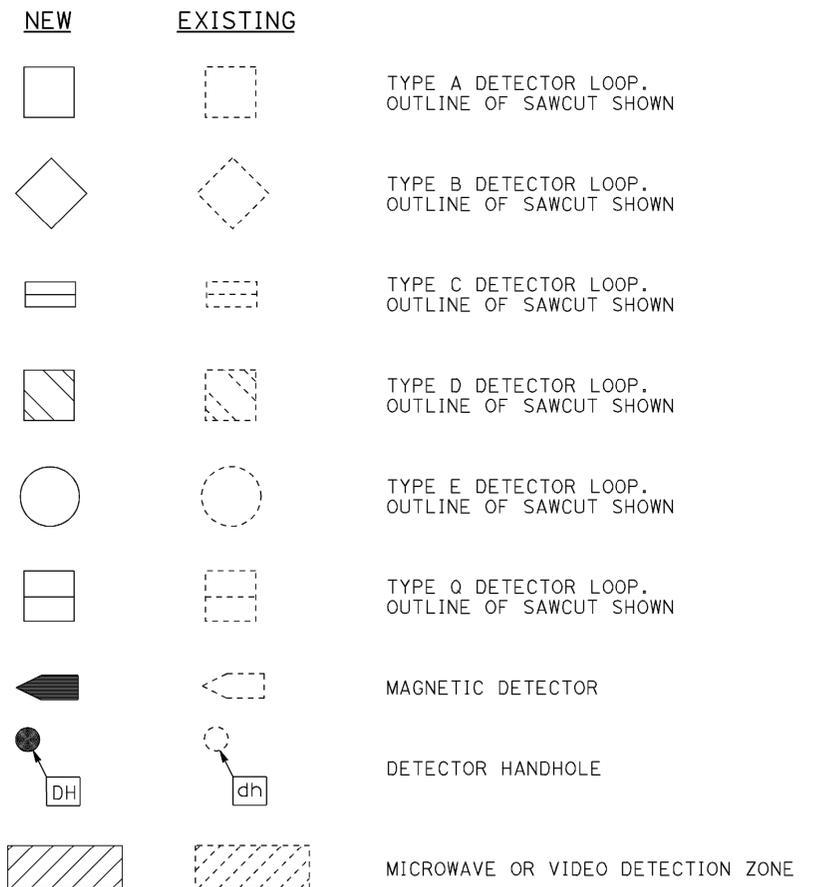
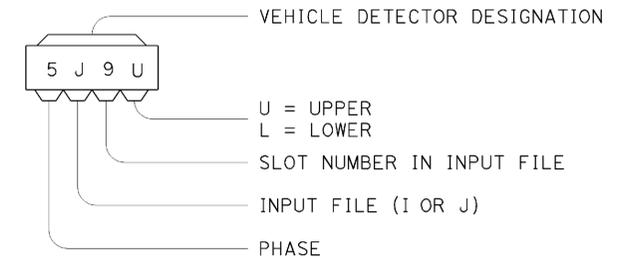
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C  
DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

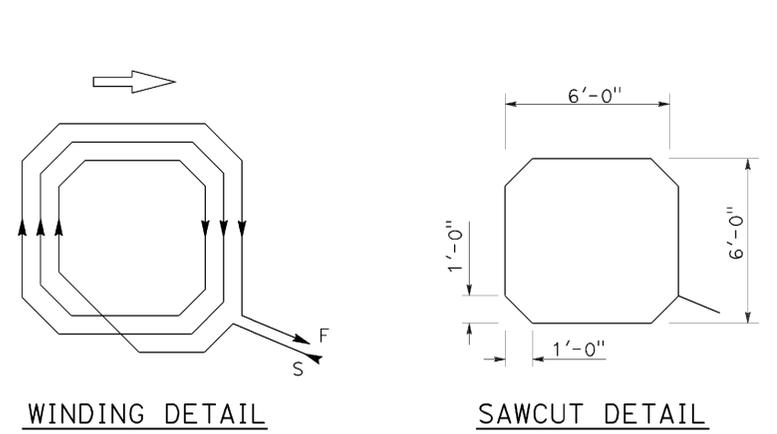
## REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	26	27

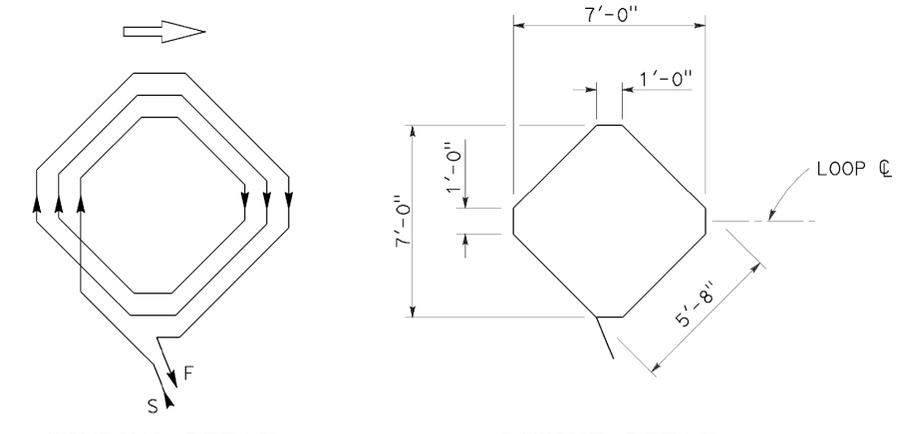
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

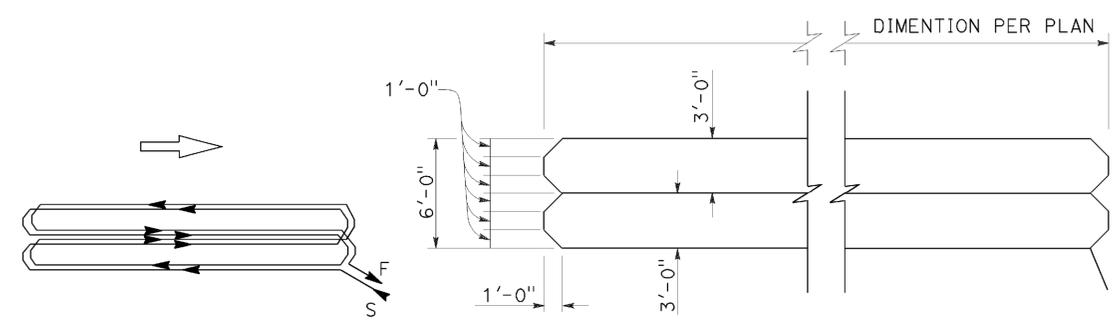
TO ACCOMPANY PLANS DATED 02-10-14



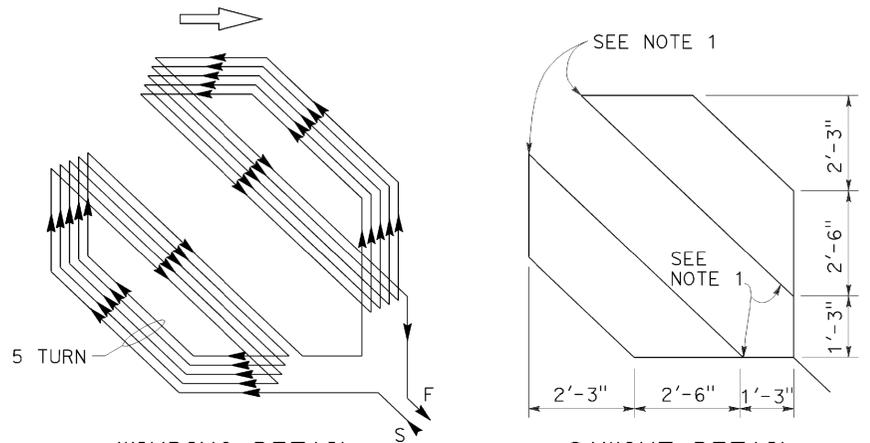
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE A LOOP DETECTOR CONFIGURATION**



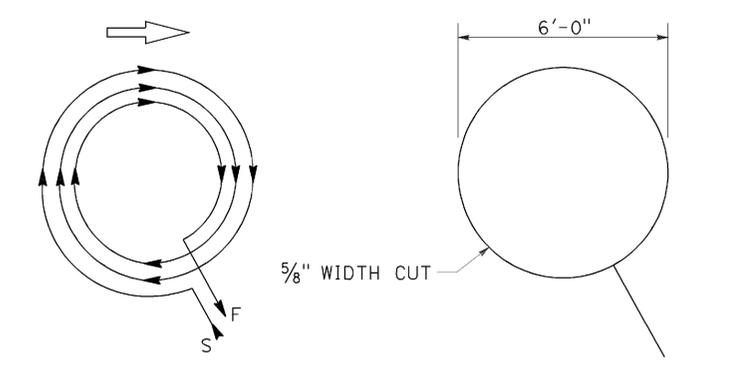
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE B LOOP DETECTOR CONFIGURATION**



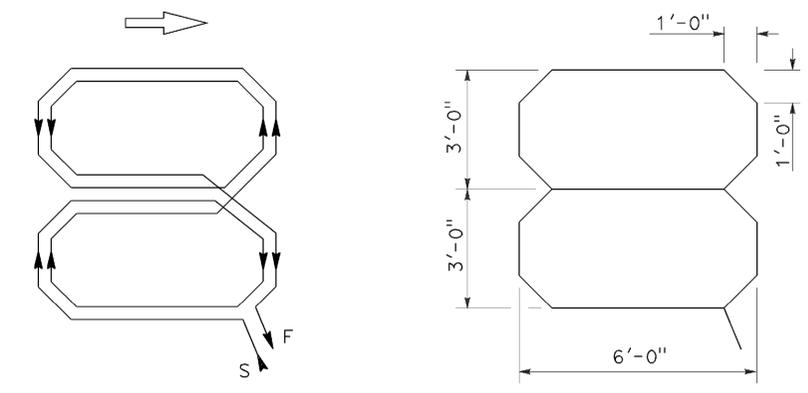
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE C LOOP DETECTOR CONFIGURATION**



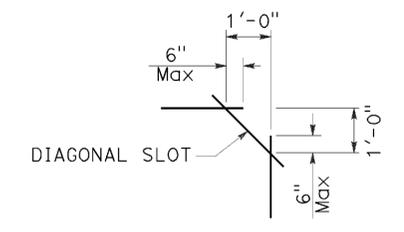
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE D LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAWCUT DETAIL  
**TYPE E LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAWCUT DETAIL  
**TYPE Q LOOP DETECTOR CONFIGURATION**



**PLAN VIEW OF  
DIAGONAL SLOT  
AT CORNERS**

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
  2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(DETECTORS)**  
NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B  
DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5B**

2010 REVISED STANDARD PLAN RSP ES-5B

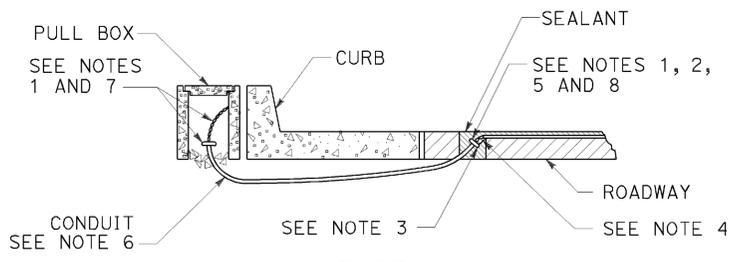
DATE PLOTTED => 11-FEB-2014  
TIME PLOTTED => 11:26

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Sha	299	60.0/67.8	27	27

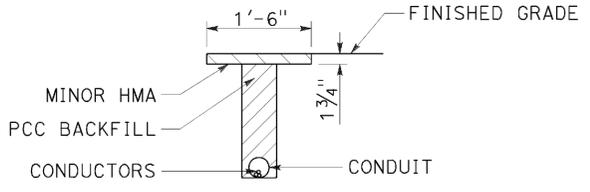
Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



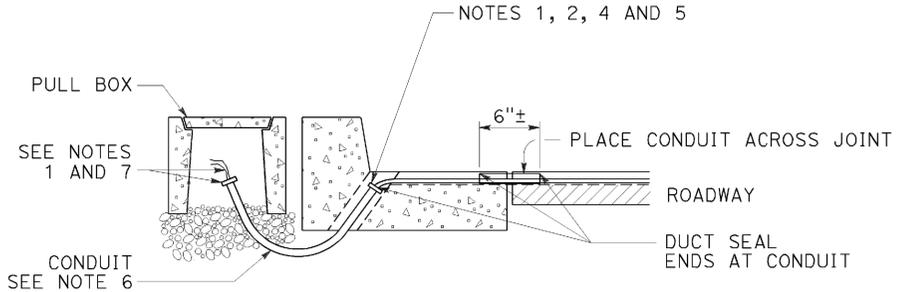
TO ACCOMPANY PLANS DATED 02-10-14



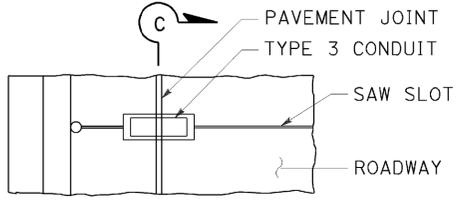
**TYPE A  
CURB TERMINATION DETAIL**



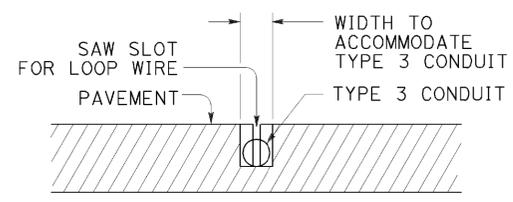
**"T" TRENCH  
DETAIL 1**



**CROSS SECTION**

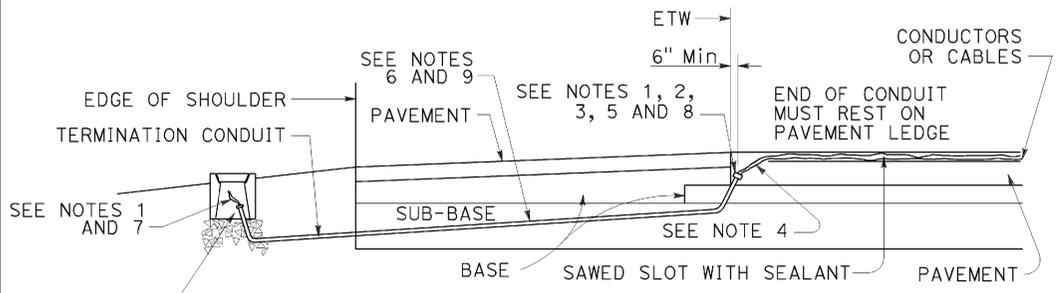


**PLAN VIEW**

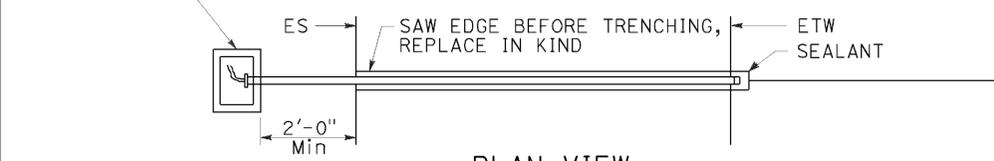


**SECTION C-C**

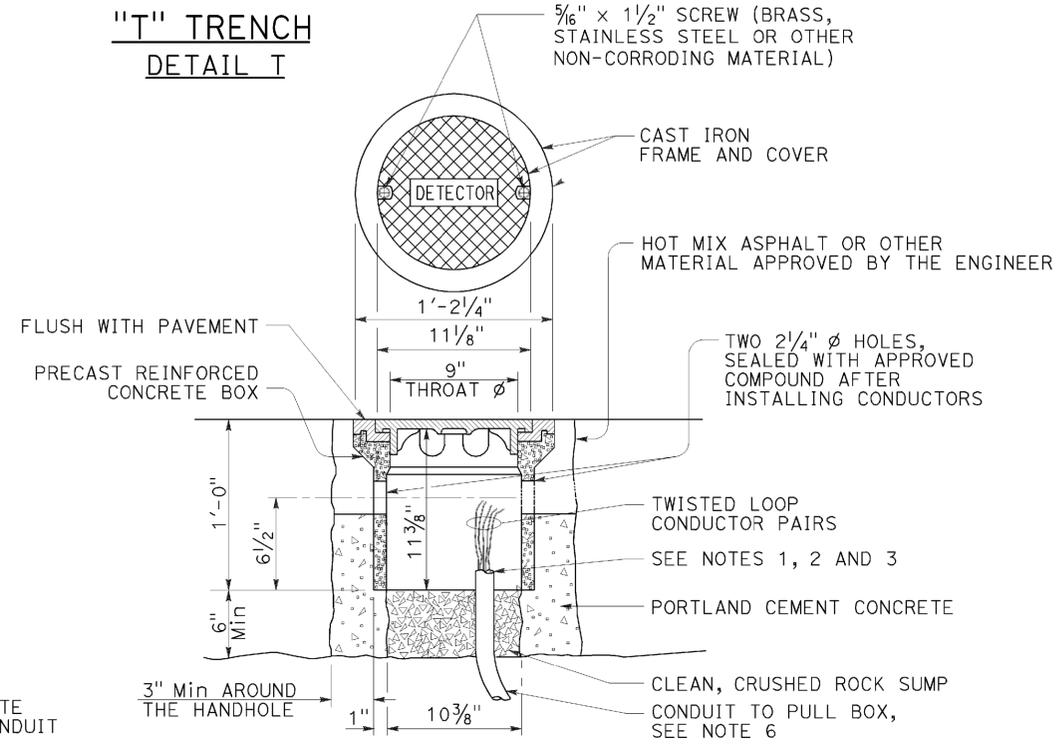
**TYPE B  
CURB TERMINATION DETAIL**



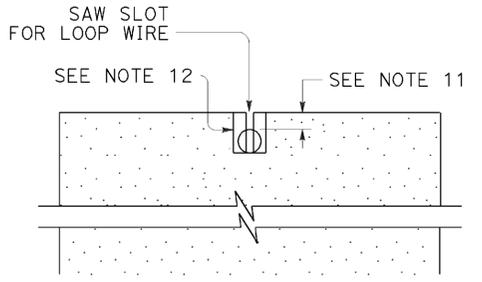
**CROSS SECTION**



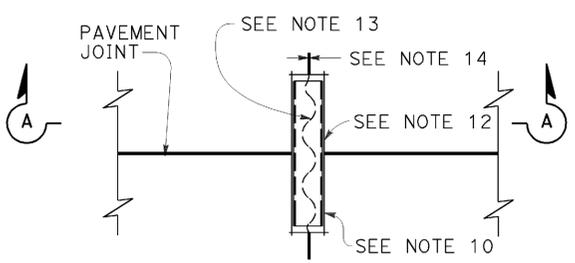
**PLAN VIEW  
SHOULDER TERMINATION DETAILS**



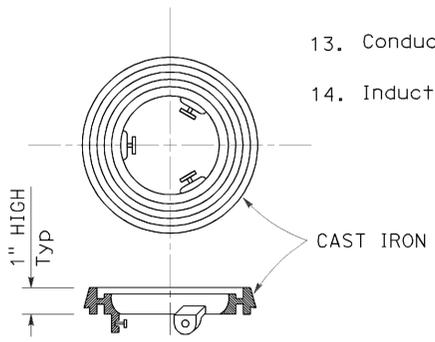
**DETECTOR HANDHOLE DETAIL**



**SECTION A-A**



**PLAN VIEW  
TYPICAL LOOP LEAD-IN DETAIL  
AT PAVEMENT JOINT**



**LOCKING GRADE RING**

**NOTES:**

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- Conduit size      Loop conductors  
 1"C minimum      1 to 2 pairs  
 1 1/2"C minimum      3 to 4 pairs  
 2"C minimum      5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (CURB TERMINATION  
 AND HANDHOLE)**  
 NO SCALE

RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D  
 DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5D**

2010 REVISED STANDARD PLAN RSP ES-5D